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TRANSACTIONS

OF THE

BRITISH LARYNGOLOGICAL AND RHINOLOGICAL ASSOCIATION.

DURING THE YEAR 1894.

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IN issuing the Fourth Volume of ANNUAL TRANSACTIONS, the Council note with very great satisfaction the unflagging interest in the Association, as evinced by the work of the Fellows; and its continued prosperity.

Signed on behalf of the Council,

W. McNEILL WHISTLER,

President.

OFFICERS, 1893-4.

President.

DR. MACINTYRE (*Glasgow*).

Vice-Presidents.

DR. W. McNEILL WHISTLER,
DR. NORRIS WOLFENDEN,
MR. MAYO COLLIER,
} *London.*

Council.

DR. SANDFORD (*Ex-officio*).

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DR. E. LAW.
MR. GEORGE STOKER.
MR. LENNOX BROWNE.

Extra-Metropolitan—DR. MILLIGAN (*Manchester*).
DR. RICHARD A HAYES (*Dublin*).

Hon. Secretary.

MR. WYATT WINGRAVE.

LIST OF FELLOWS.

JULY, 1895.

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BARON, BARCLAY J.	Bristol.
BRONNER, ADOLPH	Bradford.
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BROWNE, WALTON	Belfast.
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COALL, R. H.	London.
COLLIER, MAYO	London.
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COLLIER, W. C.	London.
DAVISON, JAMES	Bournemouth.
DUNCANSON, K.	Edinburgh.
DRINKWATER, H.	Wrexham.
EWING, F. C.	St. Louis, U.S.A.
ELLIS, RICHARD	Newcastle-on-Tyne.
GRANT, J. DUNDAS	London.
HAYES, R. A.	Dublin.
HERRICK, R. W.	Nottingham.
HERSCHELL, G.	London.
HODGKINSON, A.	Manchester.
HODSON, ALGERNON H.	Brighton.
HOLMES, GORDON	London.
HOLLOWAY, GEORGE	London.
HUNT, MIDDLEMASS	Liverpool.
HEWETSON, H. B.	Leeds.
HILLIS, JOHN	Dublin.
HUTCHINSON, A.	Glasgow.
JONES, CARMALT	London.
JAMES, W. CULVER	London.
JAKINS, PERCY	London.
JENNINGS, J. E.	London.
LAW, ED.	London.
LODGE, SAMUEL	Bradford.
MACINTYRE, JOHN	Glasgow.

LIST OF FELLOWS.

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MARSH, FRANK	Birmingham.
MATHESON, FARQUHAR	London.
MILLIGAN, W.	Manchester.
MCGILLYCUDDY, W.	Bournemouth.
ORWIN, ARTHUR	London.
ORR, J. O.	Toronto.
PEGLER, L. H.	London.
ROBERTSON, W.	Newcastle-on-Tyne.
REES, J. M.	London.
REID, ST. G.	London.
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SCATLIFF, J. M. E.	Brighton.
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SCOTT, W. G.	New Zealand.
SMITH, F. A. A.	Cheltenham.
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VICARS, FREDERICK	London.
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WILSON, W. WRIGHT	Birmingham.
WINGRAVE, WYATT V. H.	London.
WALKER, C. R.	London.
WHISTLER, W. MCNEILL	London.
WOLFENDEN, NORRIS	London.
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THE BRITISH LARYNGOLOGICAL AND RHINOLOGICAL ASSOCIATION.

THE SEVENTEENTH GENERAL MEETING,

Held on April 13th, 1894.

President—Dr. JOHN MACINTYRE (Glasgow).

Nineteen Fellows and Ten Visitors were present.

The following were elected Fellows :—

ARTHUR HUTCHISON, M.B.
GEO. HERSCHELL, M.D.
HARRY CAMPBELL, M.D.

Mr. GEO. STOKER gave notice that he would introduce the following motion at the next General Meeting: "That the word 'Otological' be added to the title of the Association."

The PRESIDENT also gave notice of the following motion: "That in addition to the ordinary meetings special evenings be chosen for holding clinical meetings."

Dr. W. MCNEILL WHISTLER showed a case of *Chronic Laryngeal Disease.*

He had brought this case before the Association at a former meeting, when he promised to report its further progress. In doing so now he asked that he might be allowed to repeat briefly the history. The patient is fifty-six years of age, and consulted him at the London Throat Hospital in April, 1887, complaining at the time of intense lancinating pain, intermittent in character, though frequently recurring, in the "lower part of the throat," as he described it. These attacks had been spasmodic in character, but for some little time before he came to Dr. Whistler there had been a more constant soreness in the laryngeal region, together with (at times) pain and spasm in swallowing. The man was also suffering at this time from sciatica. With the exception of occasional rheumatic attacks he said he had always enjoyed good health, and he looked a healthy and strong man. There was no history of

syphilis, or any indication of any pulmonary disease. He had served many years as a policeman, but he had never had any blow or other injury to the neck.

He was first attacked with pain in the throat, which he described as neuralgic in character, as far back as 1875. This seizure was most sudden, and so severe that he had to be relieved from duty. This was the first time that he had ever noticed any trouble in the throat. He stated that the attack passed off quickly, and that from that time until 1881 he remained well, a period of six years. Then he went as an out-patient to Golden Square Hospital, owing to a relapse of the original symptoms. Under treatment by sedative inhalations and local applications to the larynx, he again obtained complete relief, which lasted until 1886, when he returned to that hospital. Judging by the patient's statement, the local signs and symptoms appeared then to have been very similar to those which existed when he came under Dr. Whistler's care, but he stated that the external swelling in the sub-hyoid region was at that time larger. He said that this was punctured, and that the laryngeal swelling was lanced, but with a negative result; no evidence of suppuration being obtained.

The signs which Dr. Whistler found were a slight surface congestion in the pharynx: a very marked redness, with swelling, on the under surface of the epiglottis, extending from the left side of the epiglottic cushion to the left ary-epiglottic fold, and upper part of the left ventricular band. The hyperæmia and the swelling were strikingly confined to the left side of the median line. There was some swelling over the left arytenoid, but no impaired movement of the crico-arytenoid articulation. There was no growth—that is to say actual outgrowth—or ulceration. Just above the upper border of the ala of the thyroid cartilage on the left side there was a limited area of thickening, appreciable on palpation, but not forming at that time any visible surface swelling.

Dr. Whistler had the opportunity of seeing the patient during an attack, while examining him at his first visit. The onset was abrupt, and he could best describe the symptoms as being those of acute cramp, accompanied by intense pain, radiating from the tongue to the lower part of the pharynx and larynx and over the hyoid region. During the seizure, which lasted only a few minutes, the patient could not speak, and any movement of the tongue increased the pain. When the speech was regained, the voice remained hoarse for a short time, but there was never any dyspnœa, and the laryngeal signs could scarcely account for the severity of the symptoms. Dr. Whistler had some time before this seen a case in which the symptoms were nearly identical, coming on as suddenly, associated with lancinating pain on movement of the tongue, and extending over the same region. That patient had suffered from repeated acute attacks of gout, and Dr. Whistler was inclined, looking at the signs in the larynx, and considering the suddenness of the attacks, the sharpness of the pain while they lasted, and the equally rapid way in which they passed away, associated with the fact that the man was then suffering intensely from sciatica, to ascribe the laryngeal inflammation in the present case to rheumatic or gouty perichondritis. Arguing from

this, he placed the patient upon alkalies and iodide of potassium, which gave him immediate relief. He subsequently took effervescing salicylate of lithia, and was soon free from all pain and spasm.

It was interesting to see that the throat symptoms and the sciatica yielded simultaneously to the treatment. The patient remained under observation for several months. The redness and swelling in the larynx persisted for some time, but with local applications, added to the general treatment, there was very little trace of these remaining when he ceased attending.

Dr. Whistler did not see him again until the spring of 1893. In the interval his throat had not troubled him. He came now with exactly the same symptoms as before, and the laryngoscopic appearances were much the same as those already described. He had for some time fallen off in his general health, he was very much weaker, and had lost over a stone in weight. The epiglottis on the left side was bound down so rigidly by the thickening of the left ary-epiglotic fold that it was difficult to get any clear view of the larynx, but on placing the mirror obliquely there was very evident swelling and thickening, with a nodulated surface extending from the epiglottis down into the ary-epiglottic fold. The movements of the vocal cords were not impaired, and they were normal in appearance. The left one was hidden anteriorly by the swollen ventricular band. The attacks of cramp were relieved by full doses of bromide of potassium; insufflations of morphia, with inhalations of benzoin, and of conium, were also used. From August last until November Dr. Whistler did not see the patient. During this time the infiltration in the larynx had become more marked, but did not extend beyond its former limit. The swelling in the left sub-hyoid region had also increased. It was distinctly circumscribed—round and hard. There was no sense of fluctuation. It was soon after this that Dr. Whistler brought the patient before the meeting of the Association. He thought from these more recent developments that the affection might be malignant, and hoped he might get some decided opinion upon the case, but this he had failed to obtain. The man was subsequently treated by iodide of potassium in five grain doses, to be taken three times daily. This he has continued throughout the past winter, and he has been relieved of all pain to the present time. Much of the laryngeal thickening still remained, and the swelling in the neck had rather increased. It has recently become more elastic.

Dr. Whistler passed a small trocar into it and drew off about half an ounce of a turbid straw-coloured liquid, with iridescent surface, which was evidently fluid from a cyst. This was confirmed by Dr. Waggett's subsequent examination, who reported that it contained large quantities of cholesterine crystals, a few blood corpuscles, and granular *débris*. After evacuating the cyst a clear view of the larynx was at once obtained. The epiglottis was no longer bound down, much of the swelling had subsided, but the thickened and rough surface remains as above.

Dr. Whistler thought the case one of the most interesting that he had met with, the special points being the abrupt onset of the pain and cramp in the first attack, with no approximate cause at the time, and

its short duration; the many years that intervened before the next seizure and between all subsequent relapses; the close relation of the cyst to the larynx, and its gradual development during the course of the long-standing laryngeal affection; the want of any evidence of injury to account for the laryngitis, and the association of undoubted rheumatic symptoms during one of the acute laryngeal attacks.

Mr. WYATT WINGRAVE: With regard to Dr. Whistler's case, a considerable light has undoubtedly been thrown upon it by the exploration. He had seen the case several times, and laryngoscopic examination afforded but little evidence of its nature, but from what was found in the fluid, he thought that there can be but little doubt of its cystic nature. The important question was with regard to origin. Apparently there is a definite connection between the cyst, which can be felt on the outer surface of the thyroid cartilage, and the swelling in the larynx. This fact is strongly suggestive of its origin, either in an unobliterated portion of the pedicle of the lateral lobe of the thyroid gland, or as a lateral diverticulum from the sacculus laryngis, constituting a laryngeal pouch. This condition, as described by Bland Sutton, occurs normally in the howling monkey, etc., and pathologically in man.[1] This vestige has been probably the seat of some inflammatory process, resulting in the deformity and symptoms complained of.

Dr. WHISTLER: I am very glad, sir, to have the opportunity of bringing this case again before the Association. I have nothing to add to the view which I have already expressed.

Mr. MAYO COLLIER. *Case of Nasal Polypi associated with Asthma.*

The first case I have the honour to bring before the society exemplifies, in a very marked manner, how nasal polypi may cause chronic irritation of the lungs. This gentleman, who has been good enough to sacrifice himself in the interests of science, has volunteered to come here to-day. It is a case of chronic asthma of a marked and severe kind. He tells me that for eleven years he has suffered from asthma, and that for several years before I first saw him he was under the care of various physicians, treated by them, and told subsequently that he had not six months to live. Since then he came under the care of a distinguished London physician, who is a friend of mine, and who asked me to see him. Previous to this he had suffered from severe attacks of asthma, so severe that he was suddenly taken at his work, became almost insensible, could not get his breath, and fell upon the floor. Cold water was thrown over him, and he was taken in a cab to a neighbouring physician in Finsbury Circus, who applied the battery, and after a great deal of trouble succeeded in bringing him to. At my friend's request I saw the case, examined it, and found that his pharynx was in a hypertrophic state, and in the nasal cavity there were a large number of polypi, springing from the middle and upper turbinate bones and obstructing both nasal cavities. I came to the conclusion that these polypi were the cause of all his troubles, and I sat down and removed

[1] "Introduction to General Pathology," 1886, p. 234.

some on one side. Subsequently, I removed the rest, and from the date that I restored his nasal respiration he never had the smallest attack of asthma. This immunity from asthma lasted until January of this year, and since that time, until about a fortnight ago, the whole of his troubles returned in an intensified form. He has, until about a fortnight ago, had attacks of asthma, so bad that he could not move from his chair to another part of the room without great difficulty—as to going upstairs it has been quite impossible—and he has been compelled to sleep in the lower part of the house. Since the first operations, in 1890, he has been living in the country. He came to me about a fortnight ago, and I found that there were a large number of polypi present both on the right and left sides. I have removed seven large polypi, as large as the top of my finger, with a satisfactory result so far, for since then he has not had an attack of asthma, and he can walk upstairs with the greatest of ease. If you will take him into the next room, and examine him, you will find some polypi still present on the left side, hanging down from the margin of the post-nasal opening. I removed three this morning. I think this is a marked and an excellent example of chronic nasal irritation affecting the pneumogastric nerve. The change in the patient has been so rapid that from intense discomfort, with sleep impossible, and complete inability to walk upstairs, he now suffers no discomfort, and can as he says "walk upstairs like a lamplighter." I think this is a case which will settle, once for all, the question of chronic nasal obstruction being an all-sufficient cause of both functional and organic diseases of the lungs and respiratory tract.

Mr. STOKER: Mr. Collier's case emphasizes examples, which I have no doubt we have all had in practice, in which there is a great connection between the existence of nasal polypi and the existence of asthma. Of course, the initial steps of Mr. Collier's treatment are what would suggest themselves to us all, but with great humility I would venture to ask him what steps were taken to prevent a recurrence of the polypi, which he so successfully removed on the first occasion, and which have recurred in a short interval, to the extreme discomfort of the patient, and which he has now once more removed.

Dr. WHISTLER: I think there can be no doubt in the minds of all of us that in every case of asthma, to leave out an examination of the nasal passages would be to leave out a very important point, and that no more brilliant results have been obtained in the relief of this affection than by the removal of nasal obstructions such as have been referred to. That we do not always obtain the gratifying result that has been met with in this and many other cases is, however, the experience of all.

Doubtless in many of these instances the presence of obstructive and irritant growths in the naso-pharyngeal tract has been overlooked until more or less permanent changes in the lungs have resulted, and among these emphysema becomes a serious impediment to cure. While we meet with cases of asthma without the existence of nasal polypi or post-nasal growths, and on the other hand cases in which these growths are not associated with asthma, yet I think there can be no question that very much has been attained in the way of successful treatment since

attention was first called to the very frequent and direct relation between naso-pharyngeal growths and asthma.

Dr. WOAKES: I am afraid I only imperfectly caught the tenor of my friend Dr. Whistler's remarks, but gather that he was discussing the various aspects of asthma originating in morbid states of the nose. Unfortunately it happens—at least this is my experience—that asthmatic patients seldom come under our observation until the asthma has existed for a considerable length of time. Under these circumstances it is patent to all that various pathological changes will have been established in the pulmonary organs, which are quite independent of the nasal disease which was their original and exciting cause. Obviously the removal at a late date of the primary disease in the nose will have very little effect upon those pulmonary changes to which I have just alluded, and which tend to perpetuate the asthmatic state even when the primary nasal disease has been got rid of. If this be so, it is apparent that every case of asthma that presents itself should, as early as possible, be submitted to a searching examination of the nasal organs, because if such cause exist and is discovered before the pulmonary apparatus has been damaged, there is every probability that when the nasal mischief has been successfully treated the asthmatic symptoms will disappear also. It is within the range of my experience that even long-standing cases of asthma are subject to severe exacerbations due to recent aggravation of their nasal mischief. One typical case of this kind I had the opportunity of detailing to this society at a former meeting. Now it is quite competent to relieve the asthmatic exacerbation arising from this cause by the removal of the recent trouble in the nose. So that from many points of view it would seem that this intractable disease, asthma, has everything to gain and nothing to lose by the light which has been thrown upon it by recent rhinological investigators.

Mr. WYATT WINGRAVE: May I ask Mr. Mayo Collier to explain why he includes the vagus as an afferent nerve in this particular reflex chain, viz., irritation of the turbinal by polypi causing dyspnœa, since the fifth is the common sensory nerve to the turbinal body. The conditions are analogous to those occurring in ear cough, in which the vagus is not necessarily concerned, the external auditory meatus being chiefly supplied by the fifth.

Dr. WOAKES: I am sorry to rise again, but it appears necessary to traverse the remarks of the last speaker, to the effect that there is no anatomical relation between the fifth nerve and the pneumogastric. As I understand it, there is a distinct communication between the nuclei of these nerves in the medulla oblongata, and by this means afferent impressions arising in the nasal branches of the fifth may reflexly be transferred to the pneumogastric and so take effect in the various organs to which its branches are distributed. Neither do I see the relevancy of the remarks on ear cough if, as I understood Mr. Wingrave to say, the pneumogastric was not concerned in the mechanism of this symptom.

Mr. WINGRAVE: Not necessarily with regard to the meatus, and certainly not with regard to the turbinals.

Dr. WOAKES: Well, as a branch of the pneumogastric, the auricular,

is usually supplied to the floor of the external meatus, it is difficult to see why an irritation of that branch should not produce an excito-motor reflex in the muscles of the larynx. This is a well recognized anatomical association, and it is the one that is now generally accepted to explain the symptom in question. What is understood by the term *besoin de respirer* has some bearing on this question. It is the impression communicated to the pulmonary branches of the vagus by the air in the lungs which has already done its work and requires to be renewed, and in response to this "want of breath" sensation the muscles of respiration come into play to effect the renewal. It is conceivable that an impression of this sort may be excited in the vagus by reflex irritations in quite other regions, and the exaggerated action of the respiratory muscles thus induced would be a part of the asthmatic tableau. However this may be, having established a connection between the fifth and the vagus nerve, it becomes clear how by its means may arise not only functional disturbance of the lungs, but of the heart also. As regards the latter organ, there is no more common accompaniment of nasal disease than disturbance of cardiac function. This usually expresses itself as cardialgia or præcordial distress, and palpitation or rapid heart. My colleague, Dr. Sansom, has brought forward a number of cases of this kind, which he referred to ear disease. I had the opportunity of seeing several of his patients, all of which were complicated with advanced nasal disease, and it was doubtless to this latter that the ear mischief was due. Deafness being a pronounced fact is more likely to attract attention, while the nasal trouble escapes notice. At any rate, these cases of ear and nose disease all exhibited cardiac disturbance; and it is difficult to see how the association can be explained except, on the one hand, through the communication of the fifth with the vagus, already pointed out, or, on the other, by implication of the cardiac branches of the sympathetic system. The one certain fact that remains is, that both organs, lungs and heart, are very commonly affected, functionally, in nasal disease, and what is more to the purpose, when the latter is cured the former cease also.

Mr. WYATT WINGRAVE: I thank Dr. Woakes for referring to Arnold's nerve, but I think he will find that its distribution does not include the external auditory meatus as a rule. It supplies the post-auricular region, and the process by which the irritation is referred to a vagus region may be a mental act in ear cough.

Mr. COLLIER: I have at once a difficult and an easy task to perform; in the first place in answering observations I have not made, and in the second place in answering the observations I have made. Regarding, first of all, the remarks I have made, I must refer to the observations of Mr. Stoker. He asked me what steps I took in this case of asthma and nasal polypi to prevent a rapid or immediate return of the disease. May I remind him that I first operated upon the case in July, 1890. The second operation was within a fortnight ago—in 1894. It is a question of what you mean by a rapid recurrence.

Mr. STOKER: May I venture to remind you what my question was? I understood that there was a recurrence in January last, and secondly I

distinctly understood that a recurrence was operated upon a fortnight ago! The first question was with regard to the recurrence in January, and the second was with regard to the rapid recurrence more recently. If I am mistaken about the recurrence recently I apologize, and ask simply about the primary recurrence.

Mr. COLLIER: I first operated upon him in July, 1890. When he had the recurrence in 1894 I did not see him, until about a fortnight ago; I think that does away with the question.

Mr. STOKER: I want to know what steps you took in the primary case.

Mr. COLLIER: A local anæsthetic, cocaine ten per cent. solution, and then applied the galvano-cautery to the whole surface, wherever there was any appearance of the pre-existence of polypi; subsequently, an astringent and antiseptic wash, and that was apparently sufficient to prevent any recurrence until January, 1894. As to the next criticism, delivered by Dr. Woakes, though not publicly, that these cases are as common as blackberries, they may be so to him but they certainly are not to myself. There was a rapid and immediate improvement of asthma, very long-standing asthma, with a history of eleven years. The asthma was so bad that the man could not walk from one chair to another, and could not go upstairs; in fact, he used to bring everything down in the morning that he would want during the day. He is a clerk in a large firm of stockbrokers in the City, and was frequently seized in his office with attacks of asthma, so much so that he once fell down upon the floor, and appeared to be on the verge of death, and he had to be carried to a physician in Finsbury Circus, who restored him by a continuous current. I brought the case forward as illustrating what serious and definite effects these nasal polypi may produce. The next criticism, I think, is a purely anatomical one, and I think I can dispose of our worthy secretary's remarks in a few words. He asks, "What can any obstruction in the nose have to do with the interior of a man's lungs?" May I, with great respect to him, point out this fact—that the nose has certain functions to perform, and those functions, amongst others, are to warm, filter, and moisten the air.

Mr. WINGRAVE: It was not a question of remote function—it was *the direct anatomical connection of the pneumogastric with the nose.*

Mr. COLLIER: That is the question I am dealing with now. I am saying that the nose has a function to perform, and that that function is to moisten, warm, and filter the air, and if the air enters the lungs unwarmed, unmoistened, and unfiltered, there is a definite irritation in the lungs, and that is sufficient to set in action those small muscles which Mr. Wingrave may possibly have forgotten the existence of—the muscles behind the bronchi—filling up the intervals of the bronchi. When irritation sets in the bronchi contract, and the power both of expiration and inspiration is limited. The same thing occurs at the top of the larynx if the air passes into the trachea unfiltered, unmoistened, and unwarmed. Besides that, may I point out that the pneumogastric sends down many branches to what is known as the pneumogastric plexus, which supplies

the whole interior of the lungs, also several branches to the trachea and larynx, as well as to what I trust we are all aware of—the pharyngeal plexus. The pharyngeal branches join here with the glosso-pharyngeal nerve, as well as several branches from the spheno-maxillary or nose ganglion of the fifth nerve.

Case of Bilateral Adductor Paralysis.

The second case is one of considerable interest, and I shall be glad to receive your opinion upon it, as I am in some slight doubt as to the correctness of my diagnosis. I am indebted to Dr. Clayton, of Broadhurst Gardens, for sending me so interesting a case. She is a nurse in his sister's family, and about two months ago was suddenly seized with inability to speak, except in a hoarse whisper. Dr. Clayton has tried tonics and astringents, but with failure to effect any improvement in this lady's voice. She apparently suffers from no uterine, heart, or lung affection, or any general trouble. I examined her larynx and was struck, immediately upon looking into it, by the width of the rima of the glottis. The space between the arytenoid cartilages was very marked, and the whole interval was greatly enlarged. Upon requesting her to phonate, I could see that the cords could not be adjusted—they were adjusted to a certain extent, but not enough to produce sound. A considerable interval existed between the vocal processes. I came to the conclusion that it was a case of bilateral adductor, or rather sphincter paralysis, the arytenoideus being also affected, due probably to functional causes. I may say that from the first I have put her upon strychnine, and regularly applied electricity to the weakened muscles, and under this treatment she has markedly improved, so far that the vocal processes can be now brought together, but the arytenoid muscles are still quite inactive, so that she is practically in *statu quo ante*, so far as the voice is concerned. I shall be very glad to have an opinion from any gentlemen present which may possibly direct me, or assist me, in her cure. I have expressed the opinion that I think the case will get perfectly well.

Dr. GRANT: It occurred to me that the cords were distinctly sluggish; no doubt it is due to want of tension. They seemed to cling together in their anterior portions, but there was no actual adhesion.

Mr. COLLIER: May I rise to ask any gentleman to give me his opinion upon this case, as I am in some slight doubt as to whether it is due entirely to functional causes.

Dr. WHISTLER: I do not find any nodulation at the anterior portion of the cord, or any structural change. I look upon it as a very clear case of paralysis of the arytenoid muscle, and I should say that it was probably of a functional nature. I have seen a few such instances in functional aphonia, remaining after paralysis of the lateral adductors. It is certainly not frequently met with under these conditions, and I have always found it to be very persistent.

Mr. MAYO COLLIER. *Case of Acute Abscess of the Left Frontal Sinus.*

When he came to the hospital he had intense pain and swelling over the eye. The eye protruded, and there was a redness extending past the mid-

frontal region. The temperature was 103° Fahr., and the boy was apparently very ill. I took him into the hospital, and after examination of the throat and nose I decided that it was a case of abscess of the frontal sinus, and I determined to trephine, or open as best I could, the frontal sinus. Next morning, under chloroform, I cut down upon the swelling, and came to pus. On examination of the inner and upper wall of the orbit with a probe, I managed to get into a small opening, which led me into a suppurating and denuded frontal sinus. I next introduced a curette, and scooped out and enlarged the opening, and subsequently passed a probe through this into the nose. Having got so far, I managed on the probe to introduce a drainage tube, and the case has since gone on fairly well. The sinus has been regularly washed out with chloride of zinc, but I regret to say that on removing the drainage tube the opening has closed in the nose, and he has now a re-accumulation of pus in the sinus.

This is also a typical case of chronic nasal obstruction. The anterior nares are very contracted ; the turbinated bones approach the septum so closely that there is no space for ventilating the frontal sinus. If you look at his palate, you will see that it is highly vaulted, being quite an inch and a half above the level of the alveolar processes. The soft palate is so pushed backwards that the anterior pillars of the fauces are nearly in contact with the uvula. You will see also that his teeth are very irregular and crowded, being pushed in by the chronic aspiration of his nose cavities. Before parting with him, I would wish also to point out that, unfortunately, in this case there is also some damage to his mental faculties. I shall be glad if some gentleman will examine him. On passing a probe you come directly upon the frontal sinus, denuded and carious. We shall get no permanent benefit in this case unless we remove the nasal obstruction and open up freely the frontal sinus.

Mr. MAYO COLLIER. *Case of Probable Epithelioma of the Larynx.*

This is one which came under my care some four years ago, and then she came to me suffering from hoarseness and cough. I examined her larynx, and found there was some ulceration on the left vocal cord, probably tubercular. The treatment I ordered was an astringent—I think it was chloride of zinc, something like ten grains to the ounce—and cod liver oil, arsenic, syrup of iodide of iron, and glycerine. Under this treatment she improved immensely, the ulcers on the cord cleared up completely, and she improved very much in health. Then I lost sight of her, and she returned about six weeks ago, complaining again of hoarseness. There was a distinct redness and swelling of the ventricular band, and a portion of the tissue under the ventricular band, and when I asked her to phonate there was a distinct inability of the cord to come to the median line. The arytenoid cartilage was distinctly stationary, and apparently the whole surroundings were fixed. Well, this state of things, after examining the neck, made me feel suspicious, and she has now been under my care, with very little or no treatment, for about five or six weeks awaiting operation. I have shown her to one Past-President of the Association, and he agrees with me in

the opinion I have formed concerning her case. The fixation of the vocal cords, her gradual tendency to anæmia, the loss of flesh—all point, in my opinion, to a distinct infiltration of the tissues attached to the arytenoid cartilage by a new growth, and I look upon it as undoubtedly a case of epithelioma.

Dr. GRANT: In the case of epithelioma of the larynx, I am disposed to look more seriously upon an affection of the glands on the left side than Mr. Collier does. I do not think the prognosis a favourable one. Still, it is comparatively early, and there are enlarged glands on the other side, so perhaps I attribute too much importance to the infiltration of the glands, but I must say I think it a very serious element in the prognosis.

Mr. MAYO COLLIER: I have had the case under my care off and on for four years, and it is only within the last six weeks that I have come to this conclusion, and I have deferred operating, perhaps a trifle too long, in order to show the case to this society. It does not occur once in many years that one has the opportunity of watching the whole progress of a case like this, and, as I have said, I have deferred operating simply in order to show the members of this society a case which is undoubtedly interesting.

The next case, *Ulcer of the Palate*, is one upon which I should certainly like to have your opinion. It is a case sent to me by a colleague of mine, and has been under his care for two months. It is an ulcer—a large circular ulcer on the palate, involving the right anterior pillar of the fauces, invading the under aspect of the right tonsil, and approaching the alveolar processes.

I may say that my colleague assiduously treated him with perchloride of mercury, but it has produced no effect whatever upon the ulcer. There is no evidence of syphilis in the man's case, or suspicion attaching to his wife. His lungs have been examined by a physician at the hospital, who declares that he is perfectly free from anything like pulmonary tubercle. There are no glands whatever to be found in the neck, he has apparently no pain, and I really am at a loss to know what is the nature of the ulcer in this man's case, and I shall be glad if any gentleman here will be kind enough to look at the case and tell me his opinion.

Dr. GRANT: That case of the ulcer on the palate is certainly a very singular one. Of course, the conclusion that one jumped at from the description was that it was going to be a case of epithelioma, but I think the duration of the case, and particularly the want of induration and infiltration, seem to put that out of court altogether, and the question arises whether, as Mr. Stoker suggested, it was one of a lupoid character. I am disposed to think it tuberculous in nature. I hope we shall have the opportunity of again seeing the case, because it is certainly a very rare and interesting one.

Mr. STOKER: I have seen the case, but I am not sufficiently a pathologist to be able to distinguish between a tubercular and a lupoid origin. I think I may venture to suggest, as we have been asked to remove some tissue growing at the surface, that we subject it to microscopic examination. If it is epithelioma at this stage, it has existed for six months, and may

be longer, without his knowledge and perception. The removal of the surface of the ulcer will give us a distinct indication.

Dr. WHISTLER: I think it would be a bold task to undertake to give a definite opinion upon it without microscopic examination of the growth. Its appearance leads me to look upon it as malignant. For a growth of that kind to come on at the age of sixty seems to me to point rather to epithelioma than lupus.

The CHAIRMAN: I am inclined to think that the tumour is epitheliomatous in nature. With regard to treatment, I should prefer to remove it completely rather than to scrape. Scraping, as a rule, involves greater possibility of irritation and consequently greater possibility of recurrence if we be dealing with malignant disease. When ulceration extends to such an extent as we have in this case, valuable time may be wasted and a successful result prevented. It might be a good thing in the first instance to remove a portion of the tumour and have it examined by the microscope before coming to a definite conclusion; but were the case under my observation I would clearly let the patient understand that if anything of a suspicious nature be found, operation should be proceeded with at once.

Dr. GRANT: The best local treatment would be energetic cauterizing.

The CHAIRMAN said that they had a large number of such cases in the throat wards of the Glasgow Royal Infirmary, and he had come to regard all conditions of scraping or burning as liable to set up a good deal of irritation, not only locally but in the glands. He was under the impression that such glands were more easily infiltrated afterwards, consequently he preferred the knife or scissors to the cautery or curette where radical measures were required. One must always consider that in any operation there are two results to be considered, the immediate and the ultimate result, and he preferred the above method of treatment to any other because in this way prevention of recurrence was more surely obtained.

Mr. COLLIER: I brought this case down, feeling considerable interest in it, because a great many gentlemen have seen it at the hospital, and not one has ventured to express any opinion on the facts of the case, and I thought that by bringing it to this meeting I should be sure to have an extensive criticism on the various phases of the case. Now I must say that I am a little disappointed that several of the most distinguished members of the Association have not dared to make the smallest remark upon the facts of the case. May I again state that he is an old gentleman of about sixty-five years. He presents himself suffering a little with sore throat, he does not complain of any pain, and there is no difficulty in swallowing. He presents himself to a physician who diagnoses syphilis, who puts him on mercury and large doses of iodide of potassium. Besides that, he is put on chlorate of potash. After two months' treatment my colleague hands the case over to me, and with great interest I go into every phase of the man's case. I have his lungs examined, his heart examined, I go extensively into the history of his life. His wife has never had a miscarriage, and there is no indication of syphilis, so far as we can make out, for after keeping him for two months on mercury, I

think that is sufficient to exclude the possibility of syphilis. Not only that, but the whole appearance of the case is distinctly against syphilis. The man has a round, circular ulcer on the hard palate, encroaching on the pillars of the fauces, and invading the tissue of the right tonsil.

There is one characteristic about that ulcer which I would ask you to bear in mind. There is a distinct margin separating it from the perfectly healthy tissue. There is no involvement of this margin at all—it is absolutely healthy. The soft palate is healthy and pink, and has no infiltration. There are two parts of the ulcer—that portion towards the median line, and that portion towards the alveolar process. The first is in a state of deep ulceration, and there is no attempt at healing ; in the other portion of the tissue approaching the alveolar process, there is granulation tissue and an attempt at healing. If you put your finger upon the inner aspect of the last alveolar process, you will find it is distinctly involved, thickened and painful. One has then to consider what is the cause of this ulceration. If it is not syphilis, what is it? You say it may be epithelioma. Now, what are the indications of epithelioma? Did you ever see a case of epithelioma of that description, where one portion of the ulcer was distinctly stationary, the surrounding tissues were not involved, no glands in the angle of the jaw, the man had never suffered pain, and only one portion of the ulcer was invading the surrounding parts? I can only say that I never did, and I never read of a case of that description. Then, you will say it may be tubercular, but I ask you did you ever see a case where the margin was perfectly healthy, no mouse-eaten appearance at the edges, no infiltration of the surroundings? I say I never did. Then, what else may it be? Now, the only ulcer I have ever seen compared to that ulcer is an ulcer you may have seen yourselves frequently on various parts of the body, especially on the penis—the ordinary "chancre" on the penis. That is the ulcer which suggests itself to me. I must say that there is no other ulcer I have ever seen that bears any similarity to that ulcer, except the non-syphilitic ulcer. I have seen them in various parts of the body, and if there is one possible shot I might have been led to make I should say he must have got some of this poison upon his palate. I myself do not believe that it is epithelioma. I do not believe it is tubercular. His lungs are perfectly healthy, and its appearance does not lend itself to that. I do not believe it is syphilis, but I do believe it will get perfectly well under local treatment. I have purposely avoided scraping, or having anything to do with that ulcer, until I had got as good an opinion as I was able to. This man, I may add, is a great smoker and has a pipe, and consequently might have got infected in various ways, and that is the only solution I can offer. As to lupus, I do not think it in the least resembles it, and as to rodent ulcer, its duration puts it absolutely out of the question. Did one ever see a lupus ulcer present an appearance anything like that one—a circular ulcer, with a perfect line of demarcation separating the diseased ulcer from the healthy tissue?

The CHAIRMAN said he would like to make a few further remarks about what Mr. Mayo Collier had said in reference to his case of ulceration of the palate. He should be sorry to be misunderstood in the case. His

remarks did not bear upon the possibility of removing the ulceration by antiseptic or sedative treatment, such as Mr. Mayo Collier had suggested. In a case of the same nature he had seen excellent results from the application of aristol locally. He thought these means might first be tried, but what he meant to convey was that once all such measures had been tried and the question of operation was present he would proceed, after microscopic examination, to complete removal of the tissue rather than curetting or cauterization.

Mr. G. C. WILKIN. *Case of Syphilitic Laryngitis associated with right apical consolidation.*

Mr. President and Gentlemen :—The interest attaching to all cases of syphilis, due to the extraordinary similarity in grouping of various symptoms to that shown in other diseases, would alone warrant my bringing the following case to your notice ; but if anything could intensify the interest and importance of such cases, it would be the remarkable manner in which this case has taken to itself the symptomatic grouping of tubercular phthisis.

The patient, a woman aged thirty-eight, was admitted to the London Throat Hospital on February 6th last, being sent by a general practitioner as an urgent case for tracheotomy. I was given to understand that the patient was suffering from phthisis.

When I first saw the patient she was in bed, somewhat exhausted by the moving, but without any sign of urgent dyspnœa. Her face was anxious, her voice a low whisper.

History.—The patient was fairly well nourished, but said she had lost a good deal of flesh since the commencement of her illness last August. There is no family history of phthisis. She has been married nine years next July. Has had no children but two miscarriages, the first about ten months after her marriage, the second three years later. Since that she has not become pregnant.

Last August the patient says she had an attack of erysipelas of the head and face, during which her hair fell off entirely and she became deaf. So far as the patient knows, the attack came on without any injury or other cause. About this time, by which is meant soon after the onset of the attack, the throat began to be troublesome, and from then until she was admitted it gradually got worse. Before the attack in August she says she always enjoyed good health.

Examination of the Larynx revealed considerable swelling of the epiglottis. The false vocal cords were greatly swollen, meeting in their anterior half completely, a small triangular chink being left behind, through which the patient breathed, and in which on adduction the true vocal cords became visible. The left false cord was more swollen than the right, so that more of the right true vocal cord was visible on adduction than of the left.

The colour of the tissue was dusky red, and fairly diffuse. Although, therefore, the patient did not appear in great distress on account of her breathing, it will be seen from the above that tracheotomy might have become an urgent necessity at any moment.

Examination of the Thorax—Lungs.—The movement of the right side in its upper half impaired. The percussion note all over was diminished. Over the right upper lobe, behind, the note was dull as compared with the other side, and the sense of resistance was greater. Moist sounds were heard generally over the thorax. There was increased vocal resonance over the upper right lobe, back and front. Pectoriloquy and a breath-sound, almost amounting to amphoric, was heard above the spine of the scapula.

Heart.—Sounds weak ; otherwise natural.

Urine.—Nothing noteworthy.

Sputum.—The expectoration from the first was only slight in amount. On three different occasions samples were taken by Dr. Waggett, the pathologist to the hospital, and examined for the tubercle bacillus, but it was never found.

The cough was dry and distressing. The patient suffered from dysphagia, fluid sometimes passing into the post-nasal space.

She had heavy night sweats and delirium. The temperature was peculiar. The first evening after admission it registered 100° F. Since, the morning and evening temperature has ranged between 97° and 99° F., but during the first ten days after admission, between the hours of twelve and three in the morning, it would run up to 102° F., the patient breaking out into a profuse perspiration. These sweating attacks have gradually subsided, and at the present time she has none.

Treatment.—As inhalation, vap. benzoin was tried at first ; but as this did not seem to relieve the patient at all, vap. conii was tried. This gave great relief.

The first night, as a narcotic, twenty grains of sulphonal was ordered. This failing, I ordered a linctus, containing codeia in half-grain doses, to be taken three times a day, and later on I gave a double dose at night time only.

Internally I gave no medicine with a view to checking the disease at first. When, however, I found that the bacillus of tubercle was not found in the sputum ; that there was no family history of phthisis, but a fairly suspicious history of syphilis ; that the laryngeal appearances were not those of phthisis, nor the general appearance of the patient in the least suggestive of the complaint, I put the woman on iodide of potassium and mercury.

A few days later I had the advantage of my colleague Dr. Whistler's opinion on the case. He agreed with the diagnosis and treatment, advising that the iodide and mercury should be pushed.

From the day the patient was put on the antisyphilitic treatment she steadily got better. There are now no signs of consolidation in the lung, though the air does not enter so freely into the right upper lobe as into the left one. The swelling of the soft tissues of the larynx is gradually subsiding, and the epiglottis is resuming its normal state, with only slight loss of substance on the left side. The voice, from being only a very low whisper, is, though still weak, gradually regaining its natural tone.

Dr. WHISTLER, speaking on the case presented by Mr. Wilkin, said : I published a case similar to this several years ago. In my patient there was extreme emaciation, night sweats and cough, with extensive

ulceration in the larynx. She had also a cavity at the apex of the right lung. These signs and symptoms pointed to tubercular disease, but she had at the same time an ulcerating gumma on the forehead. Under iodide of potassium she rapidly improved, and in two months' time the laryngeal and pulmonary disease was cured. When I saw Mr. Wilkin's case the appearance of the larynx pointed, in my opinion, more to diffuse infiltration of syphilis of a tertiary character than to tuberculosis. Remembering the case I have cited, I advised the continuation of anti-syphilitic treatment, and I think that so far we may say that the result has been very satisfactory. Now-a-days, of course, we have the aid of microscopical examination for tubercle bacilli in doubtful cases, which I did not have in the case I have referred to.

Mr. WILKIN: I simply brought the case forward because I thought the combination of disease in the larynx and disease in the lung—the apex of the right lung—was one which is very rarely met with, and, being undoubtedly due to syphilis, was one of extreme interest. Another reason why I laid particular stress upon bringing this case before the society is that in the examination of the sputum never were any bacilli found; and I think it is a great advance, from a diagnostic point of view, that we are able with confidence to examine the sputum for the bacilli. I do not take the strong view of the bacillus theory that a great number of gentlemen in the profession do, but at the same time I do think that in all tubercular cases or suspicious cases of tubercular disease the examination of the sputum is a thing which every doctor should do, because it undoubtedly may throw a good deal of light upon the after treatment.

DEMONSTRATION ON THE USE OF THE PHONOGRAPH IN MEDICINE.

Dr. MACINTYRE then proceeded to demonstrate a number of phonographic records, and classified them as follows:—Firstly, physiological. He let the fellows hear several records taken of cases where complete excision of the tongue had been performed. In some of these cases the patient could speak well, and in some instances the patient was able to pronounce every letter of the alphabet. The best instance he had ever seen of such was that of a case of Prof. William Macewen's, of Glasgow, where the patient could speak better after complete than after partial removal of the organ. He might have an opportunity of showing these records at the Association some time in the future. Such cases afforded a striking example of the adaptability of parts for new work when important organs were removed.

Secondly: Dr. Macintyre thought the phonograph was going to be of immense use in teaching those who are deficient in hearing and speaking.

Thirdly: A series of cases indicating hoarsenesses were exhibited, and in this special branch its suitability for medical teaching was especially shown. Dr. Macintyre demonstrated hoarsenesses due to new growths, differing from those due to pressure upon the nerves, and these again from loss of voice depending upon ordinary catarrh. Records were also given of cases of loss of voice where whispering or buccal sounds alone could be detected.

Lastly: The Chairman intimated that he had been able to record such

fine sounds as those of the heart by means of special apparatus constructed by himself.

The second part of this demonstration bore particularly on the transmission of these sounds. He had not only been able to record on the phonographic cylinders, but to transmit the sounds long distances. He further described a number of microphones devised by himself and suitable for medical purposes, and said he felt quite sure the day was not far distant when, by means of the phonograph in class-rooms of colleges or universities, we would be able to teach students directly from such records and also to transmit the sounds proceeding from the living patient in a hospital at a distance so as to allow numbers of students to hear them at the same time.

PATHOLOGICAL SPECIMENS.

Dr. MACINTYRE. *Tubercle of the Larynx.*

This specimen was shown by the President with a view to pointing out how much good sometimes followed tracheotomy, even where the disease was extensive. The patient, a girl aged fifteen, came to the Glasgow Royal Infirmary six months ago, so much asphyxiated that chloroform could not be administered ; the operation had to be performed immediately, but while the patient was practically unconscious. A careful examination afterwards revealed the extensive nature of the affection, the whole interior of the larynx being diseased. It was not expected that the patient would recover from the operation, especially considering the advanced state of the disease and the general emaciation. The relief to the breathing and swallowing was so great that within a week she was able to go about, and shortly afterwards she was dismissed to become an outdoor patient. Death did not take place until four months afterwards, and that, as far as we could learn from the mother, was due to an accident with the tracheotomy tube. Between the time of her dismissal from the hospital and death she became much stronger ; the general emaciation became less and less as the breathing and swallowing improved. The interest in the case lies in the great recuperative powers exhibited by the patient under conditions which would have led one to expect that no recovery was possible.

Dr. MACINTYRE. *Epithelioma of the Septum.*

The patient, a man aged fifty-three, was taken into the Glasgow Royal Infirmary, suffering from what he called polypus. On making a careful examination it was quite evident that we were dealing with a round tumour, the size of a cherry, dark in colour, springing from the anterior portion of the septum, and involving the perichondrium over the triangular cartilage on the left side. The tumour was excised along with the cartilage, and the patient made a good recovery. A section under the microscope shows that it was a case of epithelioma of the septum, as diagnosed before operation.

Dr. MACINTYRE. *Multiple Papillomatous Tumours in Children.*

The case from which this specimen was obtained was that of a boy, brought into the Royal Infirmary, suffering from loss of voice. Next day

I saw the patient, and found the interior of the larynx completely filled with these papillomatous masses. They were removed with Dundas Grant's forceps, in three sittings, and the patient has recovered completely. The loss of voice and the difficulties in breathing have entirely disappeared. This case has been placed on record because it has been suggested that thyrotomy should be performed in such cases.

Mr. WYATT WINGRAVE. *Tonsil Polypus.*

The sections were those of a growth from the faucial tonsil, which he described as springing from the floor of an enlarged crypt. When first seen it appeared as a red polypus projecting about half an inch from the surface of the left tonsil. On removal with a snare, the portion below the surface measured three-eighths of an inch. Microscopically, the deeper portion consisted of dense small cell tissue, whilst the projecting part showed dilated vascular channels, surrounded by spindle-shaped cells, and covered superficially by stratified epithelium, constituting an angio-fibroma.

EIGHTEENTH GENERAL MEETING,

Held July 14th, 1894.

President—Dr. J. MACINTYRE (Glasgow).
Vice-President—Dr. NORRIS WOLFENDEN.

Thirty-five Fellows and Visitors attended.

The following were elected Fellows:—

FREDERICK SPICER, M.D.
HOLBROOK CURTIS, M.D. (New York).
CLAUDE WOAKES, M.R.C.S.
ROBERT FULLERTON, M.D.

Dr. MACINTYRE proposed, "That, in addition to the ordinary meetings, special evenings should be chosen for holding clinical meetings." This was seconded by Mr. GEO. STOKER, and carried unanimously.

Mr. GEO. STOKER proposed, "That the word 'Otological' be added to the title of the Association." This was seconded by Dr. PEGLER.

Mr. MAYO COLLIER proposed the following amendment: "That the name be not changed, but that cases of Otology, having a bearing upon Rhinology, be accepted for discussion."

This not finding a seconder—

Dr. MILLIGAN proposed, "That the question of formation of an Otological Section being of so much importance to the Fellows of this Association, the proposal be referred to a specially selected committee to consider and report." This was seconded by Dr. HILLIS and carried.

The following Fellows announced their intention of presenting electric lamps to the Association:—

Mr. LENNOX BROWNE.
Dr. COALL.
Dr. MACINTYRE.
Dr. SANDFORD.
Dr. WHISTLER.
Dr. WOLFENDEN.

Dr. EDWARD LAW. *A Doubtful Case of Chronic Laryngeal Disease in a Diabetic Subject.*

Mr. W. W., aged forty-eight, consulted me on March 24th, 1894, complaining of "hoarseness and the occasional expectoration of a little muco-purulent secretion, tinged with blood, especially in the morning after hawking. A slight hacking cough and shortness of breath on exertion."

Two years ago last Christmas the patient suffered from influenza, associated with acute laryngitis, since which attacks he has frequently had fits of coughing on entering a smoke-room or similar atmospheres.

He dates his present trouble from November 29th of last year, when he was seized with a severe paroxysm of coughing whilst travelling by train, and just recovering from a bad cold. He has had glycosuria for the last twelve years, and he is also gouty. There is no pain or discomfort on swallowing, and no history of syphilis or hereditary malignant disease, and his weight has not altered during the last eight years.

On examination I found general congestion of the naso-pharynx. The epiglottis, ary-epiglottic folds and ventricular bands were much swollen, very hyperæmic, and slightly œdematous. It was impossible to obtain a good view of the vocal cords, which were, however, red, thickened and fleshy in appearance, with apparently free movement.

I prescribed sedative inhalations, insufflations and pastilles; rest, particularly of the voice; a simple diet, with avoidance of alcohol and tobacco.

The local condition very rapidly improved, and on April 2nd all that remained was redness of the left vocal cord, which was also somewhat swollen, and presented an eroded appearance on the upper surface of the middle third. A day or two later he was seen by my friend Dr. Whistler who verified my observations.

On April 6th he returned home to Yorkshire, and I did not see him again until April 19th, when I found the left vocal cord red and fleshy-looking, with a somewhat ragged and granular appearance; but after carefully washing away a little muco-purulent secretion I could not detect any distinct ulceration, only, as it were, an abrasion. I saw for the first time, at this examination, a small nodule situated immediately below the anterior commissure of the cords, and growing from the tracheal wall. This condition, with slight congestive variations, has somewhat improved, especially whilst residing at his own home during the last three weeks. He has taken from fifteen to sixty grains of iodide of potassium daily for five weeks, and been treated locally with morphia, iodoform and chloride of zinc.

I should like the Fellows of this Society to kindly examine this patient and to assist me in determining whether we have to deal with a chronic inflammatory affection or an intrinsic malignant disease of the larynx. If the latter, is any operative procedure advisable in a diabetic subject?

Mr. LENNOX BROWNE: I think it is very difficult to say, seeing a case of this sort for the first time, whether it is malignant or not, and one naturally would pay great deference to the opinion formed by several gentlemen who have had the opportunity of seeing it for many months,

but I must confess on first sight I should not have much fear that the condition of the larynx under discussion is malignant. I heard that the patient had had influenza. It looked to me like a case such as one sees of laryngitis, occurring after influenza, and in spite of the fact that there is no history of syphilis I would not eliminate the possibility of this dyscrasia in the case, especially as the patient since he has had iodide of potassium has improved. I should, before I decided on splitting his larynx, be inclined to try if mercury, either internally or by inunction, or, better still, a properly regulated course at Aix-la-Chapelle, would be effective. Not until then could one say that the ground was clear for a definite diagnosis either for or against malignancy. That is simply an impression on a cursory glance of the patient, and I do not ask that it should be accepted in any other sense.

Dr. MIDDLEMASS HUNT: In my opinion this case is undoubtedly obscure, but taking into consideration the history of the disease and the result of the treatment, I think this is one of the most appropriate cases for splitting the larynx and clearing out all the parts. A case under my own care was that of a man, aged fifty-five years, who had a thickened nodule of the posterior half of one cord—movement was perfectly free and his voice was normal. How long the condition had existed before I saw him I do not know. It continued for some four months. At the end of four months, not on my advice, but on the advice of a London specialist, he consented to have the larynx split. Personally, I did not think there was proof of its malignity. He got very fat and quite well under my hands, but still the disease did not disappear. Now what was the result? The result was that when the specimen was submitted to two pathologists, one declared that it was the earliest case of malignant disease that he had ever seen, and the other said there could be no doubt about its being malignant. I think this case is similar, and that one would be justified in splitting the larynx and clearing it out.

Dr. DUNDAS GRANT: I have nothing to say except that I share with Dr. Law the responsibility of entertaining a doubt about this case. I think it is a case which is perfectly obscure. The absolute mobility of the vocal cord and the certain absence of any progress in a malignant direction since we saw him renders it very justifiable to hold the opinion that it is not malignant. At the same time there is the age of the patient, which is very suggestive, and the fact that the disease is certainly not disappearing with the rapidity that a syphilitic lesion generally does under the active antisyphilitic treatment this has been exposed to. I confess I am utterly unable to give an opinion.

[Dr. Grant was under the impression that a mercurial course of treatment had been carried out, but this Dr. Law admitted was not the fact.]

Dr. WHISTLER: In reviewing the history of this case I think it important to note that the commencement of the affection does not appear to have actually dated from November, 1893. On the contrary, there is a distinct statement on the part of the patient that he has been subject to recurring attacks of laryngitis, with more or less persistent hoarseness, soreness, and cough, for two or three years past. From

these intermittent attacks he appears to have made fairly good recoveries, until the onset of the present affection, which supervened about eight months since upon an attack of influenza. The laryngeal inflammation has since then undoubtedly assumed a more aggravated form, yet, while the hoarseness and irritation have been more markedly persistent, the general type of the affection does not appear to have varied much throughout the whole course. Notwithstanding its long duration, the laryngoscopic appearances, as already described by Dr. Law, offered no characteristic features of either malignant, syphilitic, or tubercular disease when I saw the patient first, with Dr. Law, last April. At that time, and since then, the affection has been strictly limited to the vocal cords, excepting the small nodule on the tracheal wall, just below the anterior commissure, which is now so reduced in size that it is hardly discernible at times. That the left cord should have been the one most intensely affected is certainly suspicious, but the right cord has always been highly congested as well; so that the disease has not been strictly unilateral, and there is now much less thickening of the left cord. I have never seen any ulceration or distinct outgrowth on either cord. There has been so far no sign of extension to the surrounding parts, no infiltration of neighbouring tissues, and no impaired movement of the vocal cords; with this, some surface congestion over the ventricular bands, and the arytenoid fold.

Of course, such appearances may be associated with syphilis, but to my mind they are not typical of this disease. There was no history of syphilis, nor were there any associated syphilitic lesions. The patient said that some years ago, after attending a confinement case, he had had an inflamed finger, which took some time to get well, and which at the time he had thought might be due to syphilitic infection. This, however, had never been followed by any general symptoms. Owing to this information Dr. Law and I thought it would be advisable to give him the benefit of the doubt, and administer iodide of potassium. As the more recent improvement that has taken place has been ascribed to this treatment, I wish to point out, and lay stress upon the fact, that the iodide of potassium, on the contrary, aggravated the trouble at the time to such a degree that it had to be discontinued, and that the later amendment that has taken place has followed upon the local treatment, together with more complete rest.

In considering the stubbornness of the affection I would call attention to the fact that the patient is gouty, and has for some years had glycosuria. In addition to this his larynx has been subjected to constant irritation and much strain. A physician, in busy practice, he has been exposed to all weathers, and has not been able to rest his voice. He has been subject to occasional bronchial attacks, and has now chronic nasopharyngeal catarrh.

I have had the case under observation, in association with Dr. Law and Dr. Dundas Grant, for nearly four months now, and though progress has been slow, every change that has taken place of late has been in the direction of progressive improvement. The possibility of the laryngitis being malignant has been an anxious question, but I do not feel that so

far the signs indicate anything more definite than those of protracted inflammation. All I would say is that from the repeated examinations I have made, and watching the course of the disease, I am now inclined to take a more hopeful view of it than I at one time entertained.

The PRESIDENT: I am sure, gentlemen, we are very much indebted to Dr. Law for bringing this interesting case before us. No consultation in our rooms could be as satisfactory as this method of bringing a case before so many men engaged in special practice. As I remarked when Mr. Mayo Collier brought similar cases before us at the last meeting, any one of us might meet a similar case in daily practice, and it is precisely for this reason that we value them when brought before the Association.

Dr. LAW, in reply, said that he still considered the diagnosis very uncertain. The negative results of the administrations of iodide of potassium for five weeks, and the history of the case had almost excluded, in his mind, the possibility of syphilis. At the same time he was quite willing to try a further course of antisyphilitic remedies, including mercury, and he hoped on some future occasion to have the opportunity of again bringing the patient before the members.

Mr. MAYO COLLIER. *A Case of Polypi of the Frontal Sinus.*

The Fellows will perhaps remember the frontal sinus case I showed last meeting; as subsequent events have proved, it was a case of polypus of the frontal sinus. The patient is not here, but I have brought the specimen, and I think you will consider it an interesting one. The case having been under my care for seven months with a discharging sinus, I determined to explore the frontal sinus from the front and look into the facts of the case. This is a portion of the bone that came into the trephine, and you can see a polypus hanging to it. The whole of the interior of the frontal sinus was filled with these polypi, which blocked it completely. I cleared the whole of the interior out and bathed it with chloride of zinc, forty grains to the ounce. I should like to illustrate to you a method of drainage I adopted in this case. Very great difficulty has always been experienced in draining the frontal sinus as well as the auxiliary sinuses, and many different tubes have been invented to this end.

The following simple procedure is the method I adopted: I passed a piece of thick drainage tube through the infundibulum into the nose large enough to fit fairly tightly. The difficulty came in how was one to get the fluid through that drainage into the nose, but it suggested itself to me that by taking two ends of the drainage tube and stretching it during each cleansing you could get perfect drainage, you could regulate the size of your drainage tube by this method according to your requirements, and could wash out the frontal sinus completely as often as you wished. This acted admirably and the case has done very well indeed; the tube has been removed, and so far the case is cured.

Dr. DUNDAS GRANT: I think Mr. Mayo Collier is to be congratulated on his cases. It is an instructive lesson as to the advisability of opening up the frontal sinus from the front when it does not yield to

treatment through the nose. Even supposing there had not been such a condition discovered, the patient would not have been any worse.

The PRESIDENT: Our thanks are also due to Mr. Mayo Collier for bringing this case before the Association, and for the remarks he has made. His very simple but ingenious method of draining is well worth attention. Sometimes when we have opened from the frontal sinus, and wish to drain into the nasal cavity, it is difficult to get the parts thoroughly washed out. This method seems exceedingly practicable.

Dr. DUNDAS GRANT. *Fibroma of the Vocal Cord.*

Miss Van —, a young actress and singer, came to me one day last month, on the recommendation of Dr. Milligan, and Dr. Harris, of Manchester, to whom she had been referred by Dr. Macintyre, of Glasgow. She complained of hoarseness, which for eight months had rendered her incapable of singing. In spite of this she continued her dramatic exertions till the completion of the tour and her return to her home in London. Hence the reason of her coming into my hands for an operation, which any of the skilful *confrères* I have named could have performed for her with perfect facility had her business permitted of it.

For deep tones her utterance was strong though rough, but she was quite unable to emit high tones in the thick, or any at all in the thin register. On laryngoscopic examination, I observed a soft pedunculated semi-translucent growth, of the size of a large pin's head, on the edge of the right vocal cord at the junction of the anterior and middle thirds. Both cords were considerably congested, and therefore, before attempting removal of the growth, I thought it advisable that she should rest her voice for a few days, and apply cold by means of Leiter's coil for several hours a day.

Shortly after in June, in presence of a number of students and visitors, I removed the growth without the slightest difficulty by means of the safety endo-laryngeal forceps, which I have already shown here on several occasions.

The growth was an œdematous fibroma or polypus of the vocal cord, and when compressed under a cover glass and stained appeared to be made up of mucous tissue, encased in a sac of flattened prickle-celled epithelium. Her voice is now comparatively clear, and she can utter "thin" register tones without difficulty. This is the smallest growth I have ever removed, but Dr. Macintyre has removed a similar one with my instrument.

Dr. HOLBROOK CURTIS (New York) said: In connection with this case I would like to call attention to the fact that many singers are subject to minute papillomata and fibromata upon their cords, not always early recognized. I have published a monograph upon this subject, in which attention was called to the fact that, in a majority of cases, the growth had been observed in those persons who in singing made use of the so-called "stroke of the glottis." This stroke cannot be made without bringing the cords into contact one with the other, producing by attrition the nodules so frequently seen between the middle and anterior third of the cords. An experience of very many cases has made me positive in my

assertion that the true treatment for these conditions, when seen in their initial stage, is not by means of the curette, the forceps, or the cautery, but by exercises of those intrinsic muscles of the larynx which cause tension of the cords. (Dr. Curtis then showed his method of strengthening the thyro-arytenoids by tones made *dans le masque* or focussed in the face, the breathing being inferior costal or diaphragmatic, with the upper ribs maintained in elevation, so that the trachea be drawn downward and the thyroid depressed.) In practising this exercise the uvula is lowered, and the tone in the cords of singers becomes darkened. In this exercise for the reduction of singers' nodes, the word "maw" (or "ma") is used, the m-tone being made with the mouth, closed at first, in order to insure the complete relaxation of all the pharyngeal muscles, and finally the tone allowed to break upon the lips as loudly as possible, without the contraction of a single muscle in the neck or pharynx. This exercise alone has restored in a few days cords supposed to have been permanently injured by singers' nodes. The theory is that in this pose the cords are in the state of greatest possible tension. They vibrate without a point of contact, and the membrane receives a massage, whereby the thickening which has been caused by attrition becomes reduced. I have the endorsement of very many of our most distinguished singers that this method of laryngeal gymnastics is productive of great strength and brilliancy of tone, the constant practice of it doing away entirely with the fatigue produced by overwork and so-called relaxation of the cords. I would like very much to go more elaborately into the detail of this method of treatment, but will not take the time of the society further than to call attention to what I consider a new method of dealing with singers' nodules. The young lady exhibited informs me that she is a singer, and has always used the pernicious *coup de glotte* (or stroke of the glottis). It is safe to predict that, if she continues, she will have a recurrence of her disability, and the case appears to me a good one for testing the treatment I have ventured to detail. I am delighted to have had the opportunity of seeing the new guarded forceps of Dr. Grant, which are most ingenious, and I shall not fail to adopt them.

Dr. BARK: I should like to say I have had two similar cases, and in both cases the patients suffered from these singers' nodules, which were removed by Dr. Grant's forceps, and in both cases the voices have perfectly recovered.

The PRESIDENT: I am sure, gentlemen, you will agree with me in saying that we are exceedingly pleased to see Dr. Curtis here, and to congratulate him, on his first appearance at the Association, upon the pleasant remarks and useful illustrations which he has given us. I might be allowed to say a word about the case of fibroma of the vocal cords, because the patient was first seen by me in Glasgow. She had an engagement at one of the theatres and was very ill, but she refused to go off duty. It was impossible for me to do anything for her, as she had to leave Glasgow in a day or two, so I sent her to Dr. Milligan, and he sent her to Dr. Grant before the necessary rest and treatment could be obtained. My impression at first seeing her was that the nostrils and pharynx ought to be put into a healthier condition. Knowing what we now do about the

relationship between catarrhal condition of the nose and throat and neoplasms of the vocal cords, I think it only right that this should be done. In all probability a further improvement would be obtained.

Dr. DUNDAS GRANT. *Disease of the Frontal Sinus.*

John M. is the patient whom I brought before the Association on the occasion on which we engaged in the discussion on disease of the frontal sinus, so ably introduced by Mr. Mayo Collier.

The disease arose from influenza, and was characterized by a chronic purulent discharge from the left nostril, the fœtor of which was perceived by the patient, and was accompanied by pain in the left frontal region. Suppuration in the antrum was excluded by the results of transillumination and of exploratory irrigation.

Subsequent to that occasion I opened the frontal sinus just below the supra-orbital ridge, the presence of pus being speedily demonstrated. Considerable erythema supervened, but disappeared on the substitution of boracic dressing for the alembroth gauze, which, from some idiosyncrasy, was not well borne by the patient. Free antiseptic irrigation was practised, and a drainage tube was passed down to the nose in the following way:—An Eustachian catheter was introduced into the frontal sinus, and its beak was easily passed downwards into the upper orifice of the infundibulum. Through this a long piece of soft pewter wire was pushed till it reached the inferior meatus, and was easily pulled out through the anterior naris. An india-rubber drainage tube was slipped over the upper end of the pewter wire, and slid down it till it also reached the floor of the nose. It was retained for several days, but caused considerable irritation, and, in view of the obvious patency of the passage, I did not think it necessary to continue its use. In spite of thorough irrigation, the discharge, though no longer fœtid, failed to diminish to any great extent until I removed the anterior portion of the middle turbinated body by means of strong cutting forceps. The improvement was then very considerable, but cure was not complete. Under local treatment by means of sublimate lotions, peroxide of hydrogen, insufflations of iodoform, and other antiseptic measures, frequent diminutions of the discharge took place, but, unfortunately, for no long period. I determined, therefore, to make a large opening, explore the sinus completely, and try more radical treatment for any condition I might find.

On the 10th of June ether was administered; the old line of incision along the lower border of the supra-orbital ridge was followed, but was carried further in both directions. There was considerable hæmorrhage, and after it was stopped the periosteum was separated and drawn upwards and downwards. The old opening was enlarged by means of a gouge and mallet, and, still further, by means of Hoffmann's gouge forceps, till the interior of the sinus could be freely inspected and the little finger could be introduced. The lining wall was covered with granulations, which were freely scraped. The opening was plugged with iodoform gauze, and a dressing of alembroth gauze over iodoform was applied. The experience of the former operation was again recalled, and very troublesome erythema, amounting almost to erysipelas, occurred.

This occasioned such discomfort that when the plug was removed its replacement was too painful to permit of its being satisfactorily carried out. Boracic dressing was substituted, and the erythema diminished, but the aperture closed almost completely. When this took place the discharge into the nose became again more copious, as far as the patient could judge by his feelings. The introduction of even a probe caused most intense pain, so nitrous oxide was administered, when the wound was forced open and two large drainage tubes were introduced. The discharge became less, and the patient was considerably more comfortable.

Dr. DUNDAS GRANT. *Disease of the Sphenoidal Sinus.*

Miss D. came under my care, recommended to me by Dr. Godfrey some years ago on account of an obstruction in her left nostril, which caused her considerable local discomfort, and a muco-purulent discharge which had not yielded to treatment by ordinary methods of douching. In addition to this, she was greatly troubled by headaches of very great severity, more marked on the left side of her head. On examination I found what appeared to be a condition of myxomatous enlargement of the middle turbinated body, which I anticipated I should have no trouble in removing. I passed a snare round it as far as I could, and removed a large piece of myxomatous tissue.

Again and again it recurred, and each time I removed it and applied the galvano-cautery. The headache was completely relieved by the operation, but returned with the redevelopment of the growth. Suppuration was present to some extent in the maxillary sinus, and, as I thought that the discharge of pus from that region might be one cause at least of the trouble in the middle meatus, I had it tapped through the alveolus and irrigated for a considerable time. This also gave considerable relief, but there was always a residuum of new growth at the posterior part of the middle turbinated body which I was unable to eradicate. A few months ago it happened that while the nostril was being irrigated a large mass of granulation tissue came away, attached to a small plate of bone, which, on examination, could be nothing else than the plate of bone forming the anterior wall of the sphenoidal sinus. Unfortunately, this was thrown away before I could make a more detailed examination of it. I then found that it was quite easy to pass a probe or the point of a small syringe into the sphenoidal sinus, and by means of the syringe to force out a small pellet of mucus, the removal of which gave the patient the greatest feeling of relief. At present there is to be seen at the upper and back part of the left nares a mass of granulation tissue with a little drop of muco-pus lying upon it. This appears to grow from the anterior aspect of the body of the sphenoid. I have scraped it away on several occasions by means of a sharp spoon, and its regrowth each time becomes less marked and less rapid, and the discharge is diminishing very considerably, while the patient experiences a degree of comfort which she has not known for many years.

The moral suggested by the case seems to me to be this, that when one finds a growth apparently arising from the middle turbinated body but which it seems difficult or impossible to surround by means of a

snare applied as it would be to the middle turbinated body, we have to suspect that the growth is situated on the anterior aspect of the body of the sphenoid. At the same time the benefit derived from the removal of the enlargement of the middle turbinal, even when the disease is situated in the sphenoidal sinus, is explicable by the greater freedom for the escape of the discharge from the latter. It will be remembered that the orifice of the sphenoidal sinus is situated behind and somewhat above the posterior extremity of the middle turbinated body, and when the latter is enlarged, and when, at the same time, there are granulations growing from the front of the sphenoidal sinus, it is obvious that the orifice of the sinus may easily get blocked up, but that the removal of a swelling of the turbinated body may render the exit for such discharges considerably more easy.

Dr. DUNDAS GRANT. *Disease of Sphenoidal Sinus.*

Mrs. C. came to me in June, 1893, complaining of pressure across the root of the nose and frontal sinus, alternating between one side and the other, for a period of two months, causing the greatest misery, and so much depression that a confidential inquiry was conveyed to me from her husband as to whether her brain was affected. She had no obvious discharge from the nose, and apparently no defect of smell. The pain was most severe when she bent her head forwards; it was worse before her menses, which were excessive. She suffered from slight giddiness and globus. On examination of her nose the only obvious abnormality was a tumidity of both middle turbinated bodies. After the application of cocaine she experienced very considerable relief. I ordered bromide of potassium and valerian internally, and eucalyptus ointment for local application. At the same time I recommended that she should consult a dentist with regard to her teeth, which had previously given her a considerable amount of trouble. The swelling of the middle turbinated bodies was reduced by means of galvano-caustic punctures. By passing a probe between the middle turbinal and the septum I could detect bare bone below the orifice of the sphenoidal sinus. By means of Lichtwitz's sphenoidal canula a little muco-pus could be syringed out of the sinus with great relief to the patient. To take the pressure off this region, and to allow free escape for any discharges, I removed the swollen posterior portions of the middle turbinals. After the subsidence of the disturbance resulting from the operation considerable diminution of the headache ensued.

Dr. DUNDAS GRANT. *Case of Paralysis of the Left Vocal Cord and other parts, associated with Hemiplegia.*

John K., aged forty-one, formerly in the army, was referred to me by my colleague, Dr. De Watteville, on account of his deafness, on June 22nd. He complained of a noise, like that of a train, in his right ear, of six months' duration, which had come on suddenly with considerable diminution of hearing power. The left ear had been quite deaf for several years, dating from the occurrence of an attack of paralysis of the left side, which came on suddenly in the night. The affection in the

right ear was simple impaction of cerumen, which was easily remedied. On the left side, however, he had well-marked nerve deafness. On further examination he was found to have paralysis of the left half of the palate and face, and of the left vocal cord.

His history was that he had primary syphilis with secondary manifestations twelve years ago. In 1890 he had "a fit" in which he fell down unconscious. He was light-headed for three weeks, and recovered with partial paralysis of his left arm and leg. Eight months later he woke one morning with his face drawn to one side, and with absolute deafness of the left ear, giddiness, inability to walk straight, difficulty in swallowing—solid food stuck in his throat, and liquids caused coughing and regurgitated through his nose.

The paralysis of the vocal cord was evidently quite independent of the hemiplegia. The former was, no doubt, due to a local syphilitic lesion affecting the accessory auditory and facial nerves, whereas the hemiplegia was due to a previous lesion of the right cerebral cortex.

Mr. MAYO COLLIER: I should like to say a few words about the method of treatment adopted by Dr. Dundas Grant in his frontal sinus case. I have been fortunate enough to have several cases under my care, and this case illustrates exactly what I want to put to you. In those cases where there is a marked bulging of the roof of the orbit I found it was generally useless to open the accumulation in the upper wall of the orbit alone, and to attempt to wash out and treat it from that position. In the first place after six, eight, ten, or twelve months, or two years' treatment you have to re-treat the case. The continual irritation of the soft tissues of the eyelid leads to a nasty thickening of the skin and very likely produces some distortion of the eyelid. I think it is wisest to immediately trephine over the sinus; that is a simple and safe operation, and by it you get a complete examination of the whole of the frontal sinus and direct an efficient drainage. I differ from Dr. Grant in his method of opening the frontal sinus, and I should like to illustrate what I consider to be a better plan. [The speaker then illustrated his method.]

Dr. DUNDAS GRANT: My explanation of my choice of procedure is the variation there exists in the extent of the frontal sinus. I did it by the safest method possible. The abscess did not protrude into the orbit. My incision was made just below the upper orbital margin, and extended in the direction it was safest to go in, and considering there is so much variation, as Mr. Collier has shown us, by means of a number of sections in the size of the frontal sinus, I think that the method I have followed is not altogether to be condemned. It amounts to pretty much the same thing, making a small opening with a gouge and mallet as making it with a trephine. I do not think the difference in the use of the instrument is very important.

I am pleased my case of fibroma of the vocal cord has been the means of bringing out these very interesting remarks of Dr. Curtis. He has spoken to us of what he has seen and thinks, and he does it as an enthusiast, but like many enthusiasts I fancy he focusses his vision upon the one point. I am sure without enthusiasts we shall keep dragging along in the mire for a very long time, and I trust that Dr. Curtis will forgive me

for looking at that aspect of the case, and accept my extreme obligation to him for the emphatic way in which he has driven home facts which none of us as reasonable men can refuse to take account of in our future treatment of patients. I had some difficulty in grasping what he meant by singing *dans le masque*, but now I grasp it, and hope to be able to apply it to my cases in the future. I quite agree with Dr. Macintyre that the nasal aspect of the case must be considered in the treatment. Dr. Bark gave us a reminder of what he is doing with my forceps, and I appreciate his allusion to the instrument very greatly. I thank you for your attention to my cases and remarks.

The PRESIDENT: I think we are all indebted to Dr. Grant for the cases he has brought forward. I should like to say about the one in which there was disease of the sphenoidal sinus that I do not think justice has been done to it on the present occasion. It is a very interesting case and presents many features of interest.

Mr. WYATT WINGRAVE. 1. *Probable Malignant Laryngeal Growth.*

E. F., labourer, aged sixty-three, complained of gradually increasing loss of voice of three months' duration. He had neither dysphagia, bleeding, cough, nor dyspnœa, but had lost flesh. His family and personal history were good. Lungs normal. The larynx on inspection presented a large, pale, puckered swelling involving the right ventricular band and cord extending below the glottis. It did not move on phonation. The left ventricular band was somewhat swollen, but the corresponding vocal cord was quite healthy and moved freely. There were no signs of active ulceration. One supra-hyoid gland on right side was swollen and hard.

2. *Probable Tuberculosis of Larynx.*

F. V., female, aged forty-three, complained of gradually increasing loss of voice and pain in the throat of six months' duration. Her chief symptoms were constant cough, but no expectoration, dyspnœa, painful deglutition, night sweats and loss of flesh. Excepting one maternal aunt, who died of consumption, her family history was good. Personally her only trouble had been a bronchocele which had existed from childhood. On inspection the vocal cords were clear and mobile, but the epiglottis and both ary-epiglottic folds were deeply infiltrated and ulcerated, and were intensely red.

Dr. ARTHUR SANDFORD read notes of three cases.

1. *Death from Convulsions* six hours after scraping post-nasal adenoids under cocaine. The operation was a simple one performed at ten o'clock. At 3.30 a severe general convulsion occurred, from which the patient recovered, but this was followed after about a quarter of an hour by violent general convulsion, and death from asphyxia in a few minutes. He considered the first convulsion to be reflex, and that during this basal hæmorrhage took place, causing the second fatal attack. The cocaine probably caused increased nervous excitability. He believed that this was the first recorded case of the kind.

2. Case of *Removal of Button three-quarters of an inch in diameter from posterior nares*, which had been *in situ* for about eight years, causing fœtid discharge, nasal occlusion, and asthmatic attacks of dyspnœa, in a patient aged thirteen years, who had no recollection of how the foreign body entered the posterior nares.

3. Case of *Intra-cranial Abscess* originating in caries of sphenoidal cells in a man aged seventy-eight. Pathological section of skull was exhibited, showing complete destruction of interior of sphenoidal bony cells, and encysted abscess extending between the layers of the dura mater from middle line to left temporal region, and extending into left orbit.

Mr. MAYO COLLIER (referring to the first case): I think a great many of these cases are due to some idiosyncrasy of the children, and will always happen as long as there are children. In a case I operated on myself the child was well till nine o'clock, but convulsions suddenly came on, and the child died in ten minutes. The whole nervous system is upset, and a violent explosion takes place in the centres of the brain and cord, and the child dies.

Mr. LENNOX BROWNE: This is not the first case I am aware of, although it is the first case published of death after the removal of the post-nasal adenoids. I should be loth to think that the cocaine had anything to do with it, because the child seems to have recovered so very quickly from the application of cocaine. I must say, however, that in my judgment cocaine is a remedy which is used too frequently, and in children especially it should be used with caution, but I can hardly think it had anything to do with the regrettable result in this case.

Dr. SANDFORD: I should like to say in reference to cocaine I am extremely obliged for the remarks that have been made. I have had great experience of eye and throat work, and I have seen evidence of the toxic effect of cocaine. This is the only case I know of extreme nervous irritability seeming to go on four or five hours after the operation, and I can only attribute the occurrence of the fatal symptoms as arising after the cocaine had passed off.

Dr. MILLIGAN read notes of the following cases:—

1. *Primary Lupus of the Septum Nasi.*

E. B., aged thirty-five, consulted me in August, 1892, upon the recommendation of Dr. Hill Griffith, of the Manchester Royal Eye Hospital, on account of the presence of pain on the bridge of the nose, and a thin ichorous nasal discharge. She stated that for the last four or five years she had suffered from nasal discomfort, but that the sensation of pain had been of only a few months' duration. In addition to her nasal trouble, she suffered from stricture of the right naso-lachrymal duct, and was under Dr. Hill Griffith for the treatment of this affection.

Although never robust, she had enjoyed fairly good general health. Her father died at an advanced age of apoplexy. Her mother was still alive, aged seventy-three. She had one brother and one sister, both alive and healthy. Upon examination the patient was found to be a fairly well nourished woman. She presented the scars of several broken down

strumous glands in the neck. The respiratory, circulatory, and urinary systems were healthy. She had suffered at times from chronic dyspepsia.

Upon rhinoscopic examination the mucous membrane of the nasal passages was seen to be distinctly anæmic. A small perforation of the cartilaginous portion of the septum nasi was found upon its anterior inferior aspect. The edges of the perforation were sharply defined, and surrounded by a few small tubercles. The mucous membrane covering the right inferior turbinated body was markedly swollen, but no tubercles could be seen upon it.

The diagnosis made was primary lupus of the septum nasi with perforation. Two or three of the small tubercle-like masses were removed with forceps, and subjected to microscopical examination, with the result that typical giant cells were found. No bacilli could be demonstrated, although they were carefully looked for.

The treatment consisted in the thorough application of the galvano-cautery, and subsequent swabbing with a four per cent. solution of blue pyoktanin. The patient was kept under close observation for several months, and local treatment persisted in until all morbid appearances had disappeared. At the same time cod liver oil and ferruginous preparations were given internally. The patient has remained well for many months, and when last seen, a few weeks ago, the nasal mucous membrane, although somewhat anæmic, appeared otherwise healthy.

2. *Acute Suppurative Inflammation of the Anterior Ethmoidal Cells.*

B. K., aged fourteen, a well-developed and healthy-looking girl, consulted me, on the advice of Mr. E. Roberts, of the Manchester Royal Eye Hospital, on account of a stoppage in the right nasal passage. She dated the onset of the trouble to a severe attack of cold in the head, contracted three weeks before coming under observation. The difficulty in nasal respiration had gradually increased, and a small quantity of a muco-purulent discharge was constantly collecting in the right nasal passage. A week after the commencement of the present trouble a small swelling began to form in the region of the inner canthus of the right eye. The swelling had gradually increased, and was accompanied by a certain amount of pain. This pain was referred to the centre of the head and to the back of the right eyeball.

Her previous health had been good. Her father and mother are alive, and appear to enjoy good health. The father admitted having had an attack of gonorrhœa as a young man, but denied ever having had syphilis. The patient was the only child, and the mother had not had any miscarriages.

On examination, the following condition was found. A considerable swelling was seen to occupy the region of the inner canthus of the right eye. The skin over this swelling was discoloured and the surrounding parts were œdematous. Pressure produced slight pain.

The right nostril was found partially filled with muco-purulent fluid. After removal of this secretion, a smooth swelling was seen to occupy the region of the middle meatus. The swelling gave me the impression

as if the middle turbinated body had been blown out. There was considerable nasal stenosis.

The diagnosis arrived at was acute suppurative inflammation of the mucous membrane lining the anterior ethmoidal cells, and immediate operation was advised. The patient was accordingly put under chloroform, and an incision made over the external swelling. Pus at once flowed out. Examination with the probe showed that a large fistulous tract led into the distended anterior ethmoidal cells. Bare bone could readily be traced high upwards towards the base of the brain, and across the middle line of the nose into the cells of the opposite side.

With a small Volkmann's spoon careful curetting was performed, and the whole cavity (which was very extensive) cleared of all *débris* and prominent spicules of bone. At the same time a large opening was made into the right nasal passage. The cavity thus formed, after thorough irrigation with a one to three thousand bichloride solution, was dusted with iodoform powder, and loosely packed with dry iodoform gauze. This was changed every day for the first three days, after which a large drainage tube was inserted. Irrigation was carried out daily with warm (one to three thousand) bichloride solution. At the present time (now three months since the operation) the patient is still under treatment. Bare bone is still to be felt upon examination with the probe, although a large part of what previously had been bare has become covered over with granulations. The general health of the patient remains good.

Remarks.—The special point of interest in the case appears to me to centre round the etiology of the affection. So far the patient's history points merely to an acute catarrhal process as the cause of the trouble. I am somewhat in doubt as to whether an acute catarrhal process of only three weeks' duration could have produced such extensive disease of the bone, and have been somewhat inclined to think that possibly the suppuration and extensive caries might be due to the rapid breaking down of a gummatous tumour. Against this theory, however, is the father's denial of ever having had syphilis (although he admits an attack of gonorrhœa), and the fact that the patient shows no signs of congenital syphilis. I shall esteem it a favour, Mr. President, if any of the Fellows here present, who have had to deal with somewhat similar cases, would be good enough to let me have the benefit of their opinion.

Dr. HOLBROOK CURTIS said: From the description of the case, and the appearance of the eye in the photograph, I should regard the exophthalmos as indicative of disease of the posterior ethmoidal cells and sphenoidal sinus. I have had an opportunity of observing, with Dr. Knapp, of New York, two or three cases very similar to this one; operation verified the diagnosis of posterior complication. I have recently made an orbito-nasal fistula for drainage in a somewhat similar case.

Mr. F. MARSH (Birmingham) showed specimens and read notes of a case of *Multiple Adenomatous Growths of the Larynx removed by Thyrotomy, without a preliminary Tracheotomy.*

The patient, a married woman, aged twenty-two, was first seen on March 14th, 1894. Four years previously (when a school teacher) she

had a "bad sore throat," and her voice has never been right since. She gradually became hoarse, and for the last two years has only spoken in a whisper. It is now a great effort to produce even this, and in addition she has had more or less dyspnœa for some months. This has got much worse lately, and she cannot now lie down, but has to be propped up with pillows when in bed, and even thus the attacks of dyspnœa are frequent and alarming. Examination with the laryngoscope revealed a cluster, the size of a small strawberry, of apparently multiple papillomata, growing chiefly from the anterior commissure and anterior part of the left vocal cord, and occluding quite two-thirds of the opening between the cords.

Removal of the growths was advised, and a series of trials were made to effect this by intra-laryngeal methods. The patient was, however, very neurotic, retching was easily excited, dyspnœa came on in a few seconds if the head was placed in position for laryngoscopy, and consequently the idea of intra-laryngeal removal had to be abandoned.

Thyrotomy was performed on April 20th under general anæsthesia. The usual incision was made, and the lower three-fourths of the thyroid cartilage was divided, with the crico-thyroid membrane. As hæmorrhage was rather free from the divided base of the growths, the cricoid cartilage was also divided, and a tube inserted into the trachea from the lower angle of the wound, and packed round with two small pieces of sponge.

The growths were removed with forceps, and the area from which they had been removed was touched with pure carbolic acid, which checked the oozing of blood, which had been very free. The tube was now removed, and the cartilages and membranes sutured with chromicized catgut. A little difficulty was experienced in accurately coapting the thyroid cartilage, which, from being forcibly held apart, had become completely split. The patient was taken back to bed breathing quite comfortably. A few hours afterwards she had an attack of dyspnœa probably from accumulation of secretion, which soon passed away. The first two days she was kept in a semi-recumbent position, fed *per rectum* with nutrient enemata, and forbidden to speak. The neck was kept at rest with a millboard collar. The wound healed by primary union, and so far as the operation was concerned the patient was practically well forty-eight hours afterwards. Although the removal of the growths had cured the dyspnœa, the voice still remained a "whisper."

On May 8th examination with the laryngoscope showed a small excrescence, resembling granulation tissue, in the anterior commissure. On May 21st this had considerably increased in size, and was doubtless a recurrence of the growth, so full doses of arsenic were prescribed. On June 21st there was marked diminution of the growth, and the voice was stronger, a few words could occasionally be spoken almost normally. Since this date she has been away from home, so that no further report of the condition can now be made.

A microscopical examination of a piece of the growth had been made by Mr. Leedham Green, F.R.C.S., who reported that it was not a papilloma, but of a typical lymphoid or adenomatous structure.

Mr. MARSH said that he had reported this case to the Association partly because of the method of operation, which had been a subject of discussion at the last two meetings, and partly because of the structure of the growths, which, both before and after removal, could not, by the naked eye, be distinguished from papillomata, and would have been recorded as such had not a microscopical examination been made. It seemed to him to closely resemble that published by Dr. Norris Wolfenden and Dr. Martin in "Studies in Pathological Anatomy," and referred to by Dr. Wolfenden at the June, 1893, meeting of this Association.

The Nature of so-called Follicular Tonsillitis and its Relation to Infectious Disorders. By Dr. NORRIS WOLFENDEN.

Mr. President and Gentlemen,—After some consideration, the subject which I have finally decided to ask you to discuss with me is one which is familiar to us all. It is also one upon which a very great deal has been written within the past few years; a great deal of solid scientific fact has been acquired, and we are under the necessity of recasting the views which have been commonly held. Without further prelude, I shall therefore endeavour to put before you a review, imperfect I admit, of what has been acquired to the knowledge of tonsillitis within the last few years.

If we take up an old standard work, *e.g.*, that of Morell Mackenzie (than which no finer text-book was ever published), we find the five varieties of tonsillitis described by Wagner reduced to two clinical forms —(1) superficial or follicular tonsillitis; (2) deep or parenchymatous tonsillitis.

The first variety is regarded as a milder form of tonsillitis in which the follicles exude a white secretion which adheres to the point of exit. This secretion, which sometimes extends over the pharynx, bears then some resemblance to the false membrane of diphtheria, but possesses neither texture nor adherency, and can easily be wiped off the surface of the glands. Mackenzie mentions paralysis of the pharynx and palate as sometimes occurring after quinsy, but does not refer to albuminuria. As to its epidemic form, he considers that there is great difficulty in distinguishing cases of simple tonsillitis from epidemics of scarlet fever, but believes the epidemic described by Mayenc to have been purely tonsillar, thereby admitting the possibility of "epidemic tonsillitis."

In discussing the "mild or catarrhal" form of diphtheria, the same authority speaks of the bright red mucous membrane, upon which appear "minute accumulations of yellowish matter, not much exceeding the size "of a pin's head, adhering to the surface of the tonsils, or to the posterior "wall of the pharynx," which may be readily removed with a camel's hair brush. A quick recovery is the rule, though there is great prostration during the illness, and weakness after. There is sometimes a trace of albumen in the urine, but occasionally "the first evidence of the true "nature of the throat affection is the occurrence of the characteristic "paralysis. The appearance of one or other of these symptoms often "forms the only clue which the physician has to the nature of the primary "affection, which in all other respects closely resembled a simple sore

"throat."[1] A severe type of diphtheria may, however, be engrafted upon this mild form.

Now, none of these points are characteristic of true diphtheria, and such cases, with which we have all so frequently met, are the despair of the clinician. In the last published large text-book, viz., that of Bosworth, we find follicular tonsillitis described as a "croupous" tonsillitis, and an endeavour made to uphold the historical differentiation between croupous and diphtheritic membranes, which we cannot but regard as rather unfortunate. The use of these two terms has led to much confusion in the past, and the significance of their distinction has vanished in the face of modern pathology, and especially bacteriology. That "follicular tonsillitis" should be "croupous" in the sense of there being fibrin in the exudation scarcely justifies its distinction of "croupous" as opposed to "diphtheritic," since the occurrence of fibrin is merely indicative of the extent of the injury. Neither is the occurrence of the membrane of diphtheria itself distinctive, since numerous caustics may produce identical membranes, and Heubner produced them in the bladder of the rabbit by ligaturing above and below, so as to procure stasis. As Bulloche remarks, they may be produced by any agent capable of necrosing the epithelium and producing violent inflammation of the mucosa. Moreover, they occur under various conditions—*e.g.*, herpes, scarlatina, syphilis, etc.—they may be produced by various micro-organisms, and are only to be regarded as truly diphtheritic when they are associated with a special bacillus (Klebs-Loeffler).

Roux and Yersin have described many cases of primary pseudo-membranous anginas which were not diphtheritic. Netter has found the membranes of the larynx associated with the pneumococcus (Loeffler's bacillus being absent). Bulloche has obtained cultures of streptococcus from two cases; Netter, streptococci and staphylococci, and Baginski the same in fifteen cases out of ninety-three. The staphylococcus aureus has been found by Sevestre and Gaston in the diphtheroid stomatitis occurring in infants after measles and whooping-cough. All this merely indicates that there is nothing specific in a fibrinous exudation, and that it is not necessarily a diphtheritic process. The false membranes of puerperal diphtheria have been shown by Widal to be due to the streptococcus pyogenes.

If fibrin is exuded into the tonsillar crypts, it is only therefore a sign of a certain intensity of degree of inflammation, and it is a pity to go back to the use of a term which may be misleading. Many of the distinctions which Bosworth gives between diphtheritic and croupous membranes have a certain clinical value, though we do not think so great as he attaches to them, but they have little pathological importance. It is therefore better to avoid the use of such a term as "croupous."

Jacobi, in 1888, propounded the statement that what we call "follicular tonsillitis" is really diphtheria—a bold view, which, notwithstanding the authority of its originator, few will be found to support.

Koplik recently ("New York Medical Journal," 1894) has described several cases of "lacunar diphtheria," which would lend some support to

[1] Morell Mackenzie. "Diseases of the Throat," Vol. I., p. 149.

these views. However, in eighteen cases out of thirty-nine examined fo- lacunar diphtheria, and all presenting the typical appearance of acute lacunar tonsillitis, only staphylococci and streptococci were found.

The very term "follicular" is really erroneous, since it is not the follicles of the tonsil which are affected, except in a very secondary manner and in a few cases. It is the tonsillar crypts or lacunæ which are the chief seat of the disease, and a more correct, if more cumbrous, name for the condition is that used by Sokolowski and Dmochowski, viz., *Tonsillitis lacunaris chronica desquamativa*, which when showing catarrhal exacerbations becomes *Tonsillitis lacunaris chronica desquamativa exacerbata*, and when assuming the form of the "infectious angina" of the French writers, or "lacunar angina" of the Germans, becomes, according to the Polish pathologists, "Tonsillitis lacunaris pseudo-membranacea." Their work, contributed to the "Deutsches Archiv für Klinische Medecin," 1892, No. 49, is of such importance that I shall make no excuse for dwelling upon it, especially since it is, so far as I know, the only complete account of the pathology of these processes, and, moreover, it is more or less confirmed by pathological investigations which have been made by Mr. Lake and myself, and which we shall take another opportunity of presenting to you.

In order to more completely understand the lacunar diseases of the tonsil, they commenced with the study of the commonly hypertrophied or enlarged tonsil, which cannot be regarded as a purely local disorder, but as an expression of a hypertrophy of the whole lymphatic system of the mouth and naso-pharynx.

The pathologico-anatomical condition of an enlarged tonsil explains an important factor in the etiology of the type of tonsillitis we have under discussion.

In such a tonsil we meet with varying degrees of softness or hardness, the fibrous tonsils in which the lacunæ and crypts are compressed out of existence, so to speak, being the most seldom met with. In the vast majority of cases we meet with a tonsil which is enlarged in various directions and soft, but of which only one condition need detain us, viz., the nature of the lacunæ.

Sometimes the entrance into these lacunæ is widely open, and the lacunæ themselves are filled with semi-fluid contents. In harder tonsils the lacunæ are altogether smaller, with but few contents, which are generally of a gritty nature. The epithelium of the lacunar walls is hard, stratified and cornified. Each lacuna has small follicles surrounding it, and the number and size of these varies with the degree of hardness or softness of the tonsil, being smaller and fewer in the hard glands. Some of these lacunar walls appear to be warty, an appearance caused by the pushing outwards of the lacunar wall by enlarged follicles and connective tissue hypertrophy in the substance of the gland, or, as we have found sometimes, due to the partial detachment of a very large plug of cornified epithelium. Sometimes the lacunæ are narrow at the orifice and widened out lower down, and the epithelium is smooth and thin. Others, again, are closed at the orifice, presenting wide and broad spaces in their deeper parts. This closure of the orifice has been brought about by acute

catarrh which has caused the union of the walls of the lacunar opening. Superficial erosions of the epithelium have been common in our specimens. In all these cases the collection of contents in the depth of the closed lacuna leads to its widening.

Changes in the follicles and adenoid tissue are generally insignificant, the former being generally quantitatively and qualitatively increased, presenting bud centres, in which we have, along with Sokolowski, observed karyokinetic forms.

The contents of the lacunæ are turbid semi-fluid material which can be expressed out of the tonsil, and consist of masses of exfoliated epithelial cells and lymph corpuscles, in addition to which various micro-organisms occur—staphylococci, streptococci, diplococci, leptothrix. In one case Sokolowski found actinomycosis.

Such collections of matter in the tonsillar crypts or lacunæ must act as foreign bodies, or irritants, and it cannot be denied that in such places there could not possibly be better natural culture media for the development of micro-organisms. Common hypertrophy of the tonsils becomes therefore a most important etiological factor in the invasion of the system by certain infectious disorders.

We are now led to consider Sokolowski's second condition, viz., *Tonsillitis lacunaris chronica desquamativa.* These are the cases which would commonly be called chronic follicular tonsillitis, in which there are one or more "cheesy" follicles in the tonsil from which may be expressed the yellow turbid contents of the lacunæ, and which produce the symptoms of the feeling of a foreign body in the throat, burning and pain on swallowing and speaking. Rasping and hawking is followed by the extrusion of the foreign matter. In such patients more or less enlargement of the tonsils is found, with lacunar openings more or less distinct, and white-yellow spots on the tonsils, which sometimes might be mistaken for diphtheria or syphilis were not the extrusion of the cheesy matter easily obtained upon pressure. The yellow matter is of the same composition as described before, and is retained in the crypts by pressure upon their orifices. It is merely a desquamative process engrafted upon a hypertrophic condition of the glands, a lacunar catarrh, associated or not with some degree of parenchymatous inflammation, which chiefly affects the follicles near to the lacunæ, and which become hypertrophied. Upon this chronic catarrh frequently is engrafted an acute process, and we then reach the condition which Sokolowski terms *Tonsillitis lacunaris chronica desquamativa exacerbata.*

In this condition, an exacerbation is indicated by slight fever and severe pain; yellow-white spots are seen upon the tonsils, which are detached with some difficulty upon pressure. Bleeding may accompany their forcible expulsion, and they reform; or, small spots are visible under the mucous membrane, of the size of a hemp seed, which look like yellow flakes. At the site of the flake small ulcerations occur. In a few days this heals and the pain disappears. A probe has to be introduced into the lacuna in order to extrude the contents, which often appear as if under the mucous membrane. Pressure ruptures the mucous membrane, and causes extrusion, but the lacuna frequently closes up again. In such a

tonsil there is an increased desquamation of epithelial cells, which process must be rapid, because so many nuclei are found which will not stain. We have, by proper staining, also found a distinct inflammatory cell zone surrounding the lacunæ. The epithelium is infiltrated with lymph corpuscles and appears thickened. The follicles, adenoid and connective tissue, appear scarcely or not at all altered. In the lacunar contents are various micro-organisms, which have nothing, however, to do with the process, since they are not present in all the lacunar contents. The breaking down of the cheesy matter, and the formation of fatty acids, etc., may, however, cause an exacerbation, or a catarrh spontaneously arises. The influence of the various micro-organisms depends upon their malignity, but at present we do not know very much of the characteristics of individual varieties in inflammatory processes. This is a variety of throat affection very often called "rheumatic sore throat."

We now come to the form of acute cryptic tonsillitis, which is in many ways the most interesting. It is that which Sokolowski terms *tonsillitis lacunaris pseudo-membranacea*, which answers to Bosworth's "croupous tonsillitis."

Of the three cases which Sokolowski details, and from which the tonsils were removed, which form the basis of Sokolowski's histological examination, all presented apparently more or less identical symptoms, viz., shivering, fever, enlarged cervical glands, and isolated white-yellow spots on the tonsils, which were apparently of lacunar origin, redness and swelling of the glands, and without recurrence after extirpation.

Histologically were found greatly widened lacunæ, with contents consisting of epithelial *débris* along with micro-organisms, and a fibrinous network. The nearer the orifice of the lacunæ the more micrococci were found. The relation of the fibrinous network to the tissues underneath was somewhat different to a typical diphtheritic process, in that it is quite superficial, and if necrosis of the epithelium exists at all it is only in certain and superficial spots. There is no special change in the lymphoid tissue or the follicles, except that upon double staining they found in the follicles lying near the lacunæ and in the lymph vessels and adenoid tissue many strongly coloured cells of large and irregular form, containing large nuclei, and resembling "plasma cells."

The second of the three cases examined by the Polish observers is important, in that no pathological changes except slight catarrh were found in the lacunæ, but the white-yellow mass on the surface of the tonsil, which lay thick over the lacunar openings and simulated secretion, formed really a typical diphtheritic membrane of fibrin and lymph cells, with diplococci. These authors conclude, however, that there was the same essential process in all three cases, *i.e.*, fibrin in the lacunæ, or on the surface, with pseudo-membrane, and superficial necrosis—the second case, however, being typically diphtheritic, and therefore most important as to the identity of these two processes (angina lacunaris and diphtheritis), the clinical symptoms are the same, the anatomical changes are the same, and the whole difference between them consists in the localization of the process. If it occur in the depth of the lacuna, it is then typical angina lacunaris, and as pathological anatomy shows

no difference between the two processes, angina lacunaris must, according to these observers, be regarded as a pseudo-membranous catarrh. The authors are themselves a little afraid of so broad a generalization from such a limited number (three) of cases, and have made no cultures, or experiments upon animals.

In our opinion such a wide-reaching conclusion as to the nature of the process cannot be justified by merely anatomical findings. We may even express a doubt whether the second case referred to was in any sense a typical angina lacunaris, and not a mild form of diphtheritis, and we cannot say that the processes are identical without a careful bacteriological study of the cases. The presence of fibrin, which undoubtedly exists in all cases of a certain degree of intensity of inflammation, is merely indicative of the amount of local injury, and we cannot but think it an unfortunate use of language to designate such "pseudo-membranes."

Sokolowski's pathological researches go much further than Bosworth's, but both tend to confirm the opinion emitted by Jacobi in 1888, founded upon clinical observation, that all lacunar tonsillitis is essentially diphtheria. If the exudation runs over the surface of the tonsil we call it diphtheria, if it is confined to specks over the crypts we call it lacunar tonsillitis. It seems that such views may be carried too far, and that the one important point which alone can establish the diagnosis has been left untouched, viz., the detection and culture of the Klebs-Loeffler bacillus, which we may now, I think, call the proper criterion of diphtheria.

As opposed to the views of Sokolowski and Bosworth, B. Fraenkel, in 1886, writing upon this "infectious tonsillitis," differentiated it from true diphtheria by the *absence* of fibrin in the lacunar contents—this, however, is incorrect, the presence of fibrin being easily demonstrated—and he cultivated three kinds of micro-organisms, viz., staphylococcus pyogenes aureus, staphylococcus pyogenes albus, and a diplococcus. He did not deny that upon such cases of purely lacunar tonsillitis, diphtheritis might be engrafted.

Seifert confirmed Fraenkel, differentiating the process from diphtheria.

I do not intend further to develop the pathological anatomy of cryptic tonsillitis in this place, as we must pass on to the bacteriology of the subject.

The organisms met with in tonsillitis have been those commonly seen in suppurative processes, viz., streptococcus pyogenes, and staphylococcus, and in some few instances the pneumococcus. Gabbi found the latter in the small abscesses of follicular tonsillitis, and Rendu met with this organism in the saliva of a woman suffering from acute tonsillitis, who possibly had contracted it from an individual with pneumonia. Netter observed pseudo-membranes caused by this organism.

Tchanovsky found out of three hundred and eleven cases of catarrhal angina the staphylococcus or streptococcus pyogenes could be cultivated from the secretion of the tonsillar crypts in 82·7 per cent. of all cases.

Nothing is more certain than the presence of these organisms in the tonsillar exudation, and it is not in the least matter for surprise that this should be the case when we remember that one hundred varieties of micro-organisms have been described by Miller as existing in the normal mouth,

while some of them may perhaps be the same organism in different stages of development—twenty-two individual organisms have been isolated and studied. It is an interesting question why these should suddenly, under some unknown conditions, produce pathological changes and invasion of the general system. There is something very tempting in the doctrine of phagocytosis, and we cannot help wondering what part these large cells play, which Sokolowski described as existing in the follicles and adenoid tissue, and which my colleague Mr. Lake and I have observed *in the lacunæ*, in face of the fact demonstrated by Stöhr of a constant migration of leucocytes from the follicles into the lacunæ, and whether they are in any manner protective against bacillary invasion, or whether they are huge lymphoid cells. They are not phagocytes.

There is reason to justify the term "streptococcal" angina, which some French physicians have applied to this form of "infectious" tonsillitis, since it is to these organisms that we chiefly owe the lesions of visceral organs (endocarditis, swelling of joints, orchitis, ovaritis, enlargement of the spleen, etc.), which distinguish a general and "infectious" form of the same order from a simple cryptic tonsillitis. It is a question of the activity of these micro-organisms. When they are few, and develop but little, we have a purely localized process; when they develop rapidly we have a breaking down of the resistance of the tonsil, whether phagocytic or otherwise, and a general invasion of the system, and according as one or the other organism develops the most activity we have a certain impress given to the clinical picture of the whole disorder. No specific organism has yet been discovered, and we know as yet too little of the life-history of individual organisms to attempt any perfect classification of clinical forms. Yet this may be attempted, as we shall see later.

It is now thirteen years since, in 1881, Bouchard read a memoir at the London Congress upon "infectious nephritis," and the year previously Kannenberg had stated the opinion that the albuminuria occurring in certain anginas was due to a nephritis which was set up by the effort to discharge from the organism the micro-organisms which had invaded it. Many cases of "infectious nephritis" have been observed. It is now a matter of common knowledge that albuminuria, which was formerly considered to be a point of differentiation in the diagnosis of diphtheria from ordinary catarrhal tonsillitis, is not any longer to be considered as evidence of a diphtheritic process. The fact is, that it is rarely absent in cases of acute cryptic tonsillitis, and I have observed its occurrence in many cases that have come under my care. Sometimes the amount of albumen discharged has been very large, but in all the cases I have seen, it has been a transitory phenomenon; but this is not always the case, since it has been followed by anasarca and uræmic poisoning, an evidence of severe renal complication.

Boucsein related such a case occurring in an infant three weeks after the termination of a severe tonsillitis. Normally the occurrence of albuminuria is coincident with the occurrence of fever, and disappears with it. It has little prognostic significance unless it persists beyond the febrile stage of tonsillitis, when we are face to face with a nephritis. But we have in albuminuria no longer any trustworthy point of differential

diagnosis between a simple tonsillitis and a diphtheria. Other lesions which may occur in cryptic tonsillitis are cardiac inflammations (endocardial and pericardial). Haig Brown[2] found cardiac murmurs in thirty-three cases out of three hundred and forty-five of tonsillitis, *i.e.*, in nine per cent. They were commonly mitral systolic, and disappeared within three weeks. Boucsein found this occurrence in two cases out of forty-three. This is not a large proportion, but it must be recollected that were systematic examination made of the heart, these murmurs might be oftener detected. It is quite common, however, not to see the patient at a time when these endocardial changes might be evident. The severe condition of ulcerative endocarditis has been observed by Fraenkel and Fürbringer. Sallard draws attention to the fact that of five cases of tonsillar pyæmia which he had collected ulcerative endocarditis occurred twice, and pericarditis twice.

Affections of the respiratory organs are not so common in infectious tonsillitis, though pleurisy (often purulent) has been observed by Hanot, Feréol, Fraenkel, Metzner, etc. Rousseau described a curious case, quoted by Sallard, where, in a patient with severe unilateral tonsillitis, broncho-pneumonia supervened on the fourth day, followed by pleural effusion.

Pneumonia has, similarly to rheumatic fever, been ushered in by tonsillitis. In one case, described by Coursade, on the fourth day of a severe tonsillitis pneumonia and nephritis supervened, and the occurrence of suppurations of the tonsils, in the course of which pneumococcus has been found to be the predominant micro-organism present, have been signalized by Bobone, Gabbi, Prideau, Jaccoud, Rendu, and Netter.

Orchitis, sometimes with suppuration, ovaritis, arthralgias, skin eruptions, erythema nodosum, purpura, and polymorphous erythema have been observed.

Phlegmonous adenitis may occur, and the enlargement of the cervical glands in acute cryptic tonsillitis is so common that one of the classical symptoms of diphtheria is no longer of value in differential diagnosis.

It would be easy to quote cases in detail illustrating these facts, but it is scarcely necessary, the conclusion to which we must come being that, in the presence of acute cryptic tonsillitis, which occurs in so many anomalous forms, we have to deal with a disorder which is eminently infectious as regards the general system; which may be contagious, which presents no constant clinical picture, and as to which the old classical landmarks of differentiation from diphtheria disappear, and the diagnosis of which must be mainly bacteriological.

There is one other clinical point to which I would devote a few remarks—viz., the occurrence of paralysis.

Cases have occurred in my experience, and I have no doubt that you have met with many such, in which I have seen for the first time a patient with paralysis of the palate, even regurgitation of food through the nose, and occasionally with paralysis of accommodation. Most careful inquiry has elicited a story of a very slight sore throat which has not caused the

[2] "Tonsillitis in Adolescents" (Baillière, Tindal), 1887.

patient to lie up even for a day. It is impossible to attach much importance to the patient's statements as to the condition or appearance of his throat, but in such cases it has presented symptoms so slight that the patient has noticed nothing himself. Yet these slight symptoms have been followed by evidences of severe intoxication of the system. In most of these cases I have made the most careful inquiry as to the possibility of such patients having been in contact with diphtheria. But there has been an entire absence of any proof of such infection, and there has been no spread of disease to any other member of the family. It would be natural to conclude that such a patient had been suffering from a mild attack of diphtheritis, but the conclusion is scarcely justified from the clinical course of such symptoms. In the absence of bacteriological examination it would be wrong to say that such cases are or are not diphtheria. In view of the fact that in an ordinary acute angina such a variety of micro-organisms develop, not only the streptococci and staphylococci, but the bacillus crassus sputigenus, the cultures of which produce a powerful toxine (Kreibohm) and the pseudo-Loeffler's bacillus, etc., we cannot lay down a hard and fast rule that severe intoxication of the nervo-muscular system, evidenced by paralyses of greater or less intensity, must necessarily justify the diagnosis of diphtheria. We may, however, say that the purely "streptococcal" throats, though followed by streptococcal invasion of serous cavities and visceral organs, are not followed by intoxication of the nervous system. The subject is one full of difficulty, which bacteriology alone can decide. In mild forms of apparent lacunar tonsillitis there is sometimes an enormous development of virulent Loeffler bacilli, the cultures of which are intensely fatal to guinea-pigs. Yet such cases resemble in all respects lacunar tonsillitis, and would properly be called such from a clinical point of view were it not that bacteriology proves them to be a lacunar diphtheria. Koplik has an interesting paper upon this subject in the "New York Med. Journ." for March 10th, 1894. It happens very frequently that lacunar tonsillitis or diphtheritis of this type exhibits no membrane, and nothing but bacteriological examination could establish a proper diagnosis.

It is important to remember that the diphtheritic bacilli may remain in the tonsil for a considerable length of time, even as long as five weeks.

We have here, therefore, a class of case in which contagion may spread, and in which the diagnosis from mere clinical signs is next to impossible.

The association of several micro-organisms in a cultivation—such a medium as is offered by the tonsillar crypts—is common, and extremely interesting.

Roux and Yersin have stated that the combination of streptococcus and Loeffler's bacillus increases the virulence of the latter, and a harmless diphtheritic bacillus may be rendered virulent by associating it with the erysipelas streptococcus, and the bacillo-streptococcic form of diphtheria is one of the gravest as to prognosis. Of ten such cases recorded by Martin, eight were fatal, and Troje in twenty-nine autopsies of diphtheria found the streptococcus in all cases in the throat, twenty times in the lungs, and thirteen times in the blood and spleen.

It has been proved that the chemical products of one kind of micro-

organism, when injected into an animal, render it very liable to invasion by the same, and perhaps by other organisms.

The common presence of the Loeffler bacillus in the mouth may perhaps explain why certain forms of apparent cryptic tonsillitis in which streptococci predominate may become diphtheritic ("engrafted diphtheria"). Perhaps the development of the lower micro-organisms has stimulated the quiescent Loeffler bacillus to development.

I have purposely avoided discussion of the "pseudo-bacillus," which, though itself a harmless organism, is thought by some to be only an attenuated form of the true Loeffler bacillus, capable under certain as yet unknown conditions of becoming virulent.

The time has not yet arrived when we may classify different forms of throat inflammations upon a bacteriological basis; yet it will come, and I believe we shall abolish such terms as "croupous," "diphtheritic," "diphtheroid," "membranous," etc. But it is possible to make an attempt as Bulloche has done, in the following manner.

1. *Staphylococcal Throat* (*Angina*).—False membranes soft, slightly adherent, and not dissociated in water, and they contain a considerable quantity of fibrin. It is of a grey-yellow colour. There is fever, pain in the throat, swelling of sub-maxillary glands and enlargement of the tonsils. The disease runs a sharp course, and cure occurs in less than six days.

All cases of purely staphylococcus throat hitherto described have followed this type. They resemble somewhat mild forms of diphtheria, yet culture experiments do not exhibit the presence of Loeffler's bacillus. Commonly the staphylococcus is associated with the streptococcus. It is to the latter that are most probably due the suppurations of distal organs. The suppurative lesions produced by staphylococci, in general, have a tendency to remain localized; not so those of streptococcal origin.

2. *Streptococcal Throat.*—This is a very common form. Bulloche observed six cases of pseudo-membranous angina due entirely to streptococci. There is a sudden, sharp fever, with or without an initial rigor. But it may come on insidiously and slowly with only dysphagia. False membranes appear on a tonsil, then invade the palatine pillars and uvula, so as to cover them like the finger of a glove, a sign supposed formerly to be distinctive of diphtheria. The mild form shows white or whity-grey membranes, adherent, the mucous membrane bleeding on their removal; they often have an inflammatory zone round them, very marked, and the throat may be very red as in scarlatinal angina. These membranes have very little disposition to spread, but recur after removal. There is enlargement of the sub-maxillary glands. The general condition remains fairly good. These cases greatly resemble moderately severe forms of diphtheria, the membrane being, however, rather less elastic, and more friable. The subjacent mucous membrane is, however, always much more inflamed than in diphtheria.

Barbier indeed relies upon the following points of diagnosis: suddenness of onset, during previous perfect health, rapid elevation of temperature, severity of sore throat, and red and inflamed pharynx. In the *severe* forms of the disorder, the exudation is grey and sanious; there is coryza

with sero-sanguinolent flow, swelling of the neck and face, and great infiltration of the peri-glandular cellular tissue, fœtid breath, rapidly increasing prostration, high temperature, and constant albuminuria. Death may occur at the end of four or five days. Croup never occurs in this disorder.

This form resembles infectious diphtheria due to the association of Loeffler's bacillus and streptococcus, but possesses this important difference, that infectious diphtheria, *i.e.*, the combination of Loeffler's bacillus with streptococcus, is invariably fatal, while even grave forms of streptococcal throat are susceptible of cure. In this form of sore throat, Loeffler's bacilli are invariably absent, and cultures carefully made reveal only streptococci.

Sometimes, in severe forms of the disorder, the exudation is extremely adherent, and not very thick. They, moreover, appear to be depressed in the mucous membrane surrounding them.

Autopsy shows the mucous membrane to be filled with pus—properly speaking, there is no false membrane. The mucous membrane is filled with leucocytes and streptococci, and there is no fibrin. Broncho-pneumonia may carry off the patient.

Erythema is frequently seen, but only in the grave forms ; sometimes red miliary eruption, more or less confluent upon the lower limbs and abdomen especially, sometimes red or scarlatiniform, of more or less extensive areas, with intervals of healthy skin, at other times along with urticarial papules.

We have before us the difficulty of diagnosing whether we have to deal with an angina, with erythema, or with a scarlatina with pseudo-membranous throat.

Bulloche insists upon two points in these streptococcal throats, viz., that they are not contagious (supported by clinical experiences), and have not yet been observed to be followed by paralysis during convalescence. The placing of such children in wards where diphtheria patients are placed, therefore, subjects them to the danger of contracting true diphtheria of a very virulent and fatal type.

3. *Pneumococcal Throat.*—Rendu, Netter, and Cornil have studied this form, but Jaccoud and Ménétrier have given the first demonstration of pneumococci in the pharyngeal false membranes, almost to the exclusion of other organisms. The case they recorded was that of a young man of nineteen, who was suddenly attacked with rigors, pain in the throat, and very pronounced exhaustion. Next day considerable glandular enlargement followed, a continuous fever, and grave general condition. There was false membrane upon the right tonsil, white and resistant, and consisting of fibrinous network, infiltrated with migratory cells. The left tonsil and uvula then became invaded, and œdema of the neck followed. At the end of a week the false membrane ceased to be produced, and cure followed.

In this case there was entire absence of the Loeffler bacillus, and only the Fraenkel-Talamon pneumococcus was present.

In Netter's case of angina, followed by pseudo-membranous angina, only pneumococci were present in the laryngeal exudate.

Pneumonia may accompany or follow this form of sore throat—(Rendu). It has been abundantly proved that the pneumococcus may produce suppurations in various parts of the body, pleuritis, meningitis, ulcerative endocarditis, otitis, etc., in patients who have never at any time suffered from pneumonia.

4. *Roux and Yersin's Coccal Angina* (*Angina à Coccus*).—Slightly developed false membranes are present on the tonsils or pharynx; there is constant glandular enlargement, but rarely very great. The false membranes are white, elastic, resistant, and have a marked tendency to invade the lips. They are reproduced during several days, and in all respects resemble true diphtheria clinically.

In the slight form there is only a slight elevation of temperature; the membranes are easily detached, and have but slight tendency to recurrence.

In other and severe cases there is extreme prostration, albuminuria, and considerable rise of temperature. They have, according to Martin, a great tendency to recurrence, and he saw in one child five attacks, in none of which was Loeffler's bacillus found, but only Roux's cocci. They may be complicated with pseudo-membranous laryngitis. In such cases, though Loeffler's bacillus has been absent during the first examination, it has been found later, probably less due to secondary infection by the specific bacillus than to association of Loeffler's bacillus with Roux's cocci.

These organisms are also found associated with staphylococci and streptococci. Their exact significance is yet less known than that of other organisms.

In some of Koplik's cases of lacunar tonsillitis or diphtheria only Roux's cocci are mentioned as being present.

In all these forms we have throat symptoms which would unhesitatingly be pronounced diphtheritic from a clinical point of view. Yet they are not diphtheria, for they are not all contagious, and though true diphtheria may be engrafted upon them, as it may upon any non-specific inflammation, this is merely accidental. There is only one symptom of diphtheria that appears to be absent from these forms, viz., paralysis, and it is yet an open question whether this may not occur in cases other than true diphtheria. It has been recorded after mumps (Joffrey), and has been produced experimentally in animals inoculated with the streptococcus (Manfredi and Traversa). Many clinicians have been of opinion that it may occur after non-diphtheritic inflammations.

What we require in all cases is a bacteriological examination, so that experience will enable us to extend our observatious and also to classify these various anginas according to a bacteriological terminology, for certainly, though they clinically resemble diphtheria, they are not diphtheria.

I have not dwelt upon the so-called "diphtheritic" sore throat of scarlatina, which appears to present itself under two forms—first, that occurring during the period of eruption, which although presenting white-grey thick, adherent membranes, appears to be only streptococcal, or at least not to contain Loeffler's bacillus, as is proved by culture experiments; and second, a late form occurring during convalescence, or

later, which are truly diphtheritic, and from the association of Loeffler's bacillus with streptococci, present a particularly grave prognosis.

It appears to me that the time is not far distant when we shall classify the inflammatory conditions of the tonsils and throat upon a bacteriological, and not a clinical or anatomical basis, and that we shall cease to speak of croupous and diphtheritic, or pseudo-membranous throats. Clinical experience demonstrates how great may be our errors of diagnosis and prognosis in these obscure cases, which form a large proportion of those which come under our care. These errors would be reduced to a minimum if we, in these very common cases, systematically practised bacteriological diagnosis, which must include cultures, and should also, if we were not controlled by a body of old women, male and female, include inoculation experiments upon animals.

I have not spoken of "contagion" in lacunar or exudative tonsillitis. There is a wide-spread opinion that this may occur. A great number of such cases have been recorded. Thus epidemics have occurred in France and in England. Such have often been seen side by side with epidemics of scarlatina and measles, but of its spread from one individual to another the proof is not absolute, though it is certainly probable. Thus Jacquemart in 1888 recorded a girl with quinsy who contaminated successively in ten days three patients under treatment for other affections, all being simply pultaceous tonsillitis. Tissier (1888) reported six cases following upon a case of tonsillitis. Descoings recorded thirty cases of contagion. Jeanselme and Richardière, Sallard, Boucsein and others have recorded cases of apparently direct contagion. Cæsar Beck said he followed its progress from street to street and from house to house.

Sendtner treated an epidemic among the servants of the Breslau Hospital which followed upon four fatal cases of puerperal septicæmia. It has happened frequently in hospitals—certain wards, or even one particular bed, being apparently vehicles of contagion. Such has happened frequently in my experience at the Throat Hospital. It never appears to attack, however, large masses of people simultaneously, but rather a number of persons living under the same roof, or the same conditions, or several members of a family, and the thought must strike us that it is often less a question of contagion from one individual to another than several persons living under a common cause, most frequently insanitary surroundings. It is not difficult to imagine that such conditions, having lowered the body resistance, give opportunity for active development of micro-organisms in the tonsillar lacunæ, which might otherwise not have invaded the system. Such throats are septic, and probably streptococcal or staphylococcal.

I shall have badly carried out my intentions if I have not succeeded in impressing you with the following conclusions: Starting with the assumption that there is no true diphtheria without Loeffler's bacillus, there is not necessarily diphtheria because there is a membrane or pseudo-membrane. Such are in no sense characteristic of diphtheria, and may be produced by a variety of causes—injury from caustics, streptococci, etc. Lacunar tonsillitis is not lacunar diphtheria. There is a lacunar tonsillitis and a lacunar diphtheria, but they are not synonymous terms, though they

present much the same clinical appearance. Whether the local appearances are of fibrin (or croupous), or of adherent membrane (or diphtheritic), does not make the condition either croupous or diphtheritic. It merely marks the extent of local injury and intensity of the process. "Follicular," or acute cryptic tonsillitis, which is the most interesting form, is not follicular at all. It is a simple or desquamative infection, due to strepto-, staphylo-, or pneumococci. It is also possibly contagious.

The pathological enlargements of the tonsil, in which a chronic process of catarrh is almost invariably present in the lacunæ or crypts, form not only the best culture media for a large number of micro-organisms, but give them the opportunity of invading and infecting the system. Whether micro-organisms reach the tonsil by the circulation, or, what is more probable in the vast majority of cases, through the mouth, chronically enlarged or catarrhal tonsils are a source of danger to the individual, forming one ready mode of access to the general system for micro-organisms. The treatment of such cases is obvious.

The clinical appearances alone allow us so little ground for diagnosis of simple tonsillitis from diphtheria that, in the absence of bacteriological diagnosis, we shall be wise to isolate such patients from the first, until the course of the disease renders its nature positive. This bacteriological examination is the more necessary, since the placing of patients with streptococcal pseudo-membranous throats in wards where there is diphtheria may convert a simple case into a fatal one.

Bacteriology should be the basis of the diagnosis, and no hospital or institution is complete without such an adjunct as a properly equipped laboratory. Fortunately, even if the diagnosis be in doubt, the treatment is pretty much the same for all these cases—viz., antisepsis.

The PRESIDENT, Dr. MACINTYRE: Gentlemen,—I think that we are exceedingly indebted to Dr. Wolfenden for having brought this subject before the Association. No question is more worthy of our consideration, because the subject is extremely interesting, and none the less so because it is one which is not very well understood at present.

I have been requested by my friend Dr. Wolfenden to show some specimens bearing upon the question. It must be evident that if the subject is to be cleared up at all that bacteriological investigations must be carefully gone into. Under the microscopes you will see specimens showing large numbers of different round-celled organisms very frequently found in the tonsils during acute affections of that organ, but which can have comparatively little to do with the disorder, inasmuch as they are very often found in and around the crypts under healthy conditions, and this brings us to the first point in question, and one which will exemplify the difficulties of investigating this subject. In a previous paper I pointed out to the Fellows of this Association that one of the greatest difficulties we had to contend with lies in the fact that a great number of organisms found in the buccal cavity during life have not yet been cultivated for the reason they will not grow upon any of the known media. There are good reasons to believe, however, that healthy secretions contain organisms (specimens of which have been placed under the

microscope) which are really pathogenic in nature, and no progress can be made until the life-history has been fully studied, or, in other words, until we know how and when to cultivate them.

In my presidential address delivered at the last meeting I gave a list of the organisms found in this cavity, non-pathogenic and pathogenic, as well as those which haye been found accidentally, whether cultivable or not. You will see under the microscope specimens of staphylococcus, pyogenes, and streptococcus, pyogenes aureus, and albus. You will see examples of diplococci as described by Fraenkel and others. In addition to these you will see some organisms which are often to be found in fœtid abscesses in the centre of the tonsil. Under another microscope you will see a number of organisms found in a case of erysipelas during which the tonsils became acutely inflamed. Other specimens have been placed under the microscope to show the typical organisms now associated with the production of diphtheria. Sections will be shown under the microscope containing Klebs-Loeffler bacillus, and in passing I might be allowed to remark that since I first spoke of these organisms in our Society three years ago reports from every centre, and in overwhelming numbers, establish the presence of these organisms in the affections to which we are now referring. I have also placed under the microscope specimens of the so-called pseudo-bacillus of diphtheria, as a great deal of late has been heard about Hoffman's description of this organism.

Much of the discussion this night must centre upon the consideration of the etiology of follicular angina. A certain number of writers, such as Fraenkel, consider this to be quite a different disorder from diphtheria. Others, such as Sokolowski, are inclined to think that lacunar inflammation of the tonsils is only a milder form of the same disorder. Another important point in the bacteriological research is to be found in the idea that the so-called pseudo-diphtheritic bacillus is merely the Klebs-Loeffler bacillus, but having for some reason or other been deprived of its poisonous qualities. It must naturally follow that before a settlement of the question we are now discussing can possibly be obtained the following points must be cleared up: — Granting the Klebs-Loeffler bacillus is the cause of diphtheria, we would naturally expect it to be found in cases of follicular angina if this were but a milder form of the disorder. As far as investigations have gone it would be difficult to make such an assertion. Secondly, in a small proportion of cases investigators have reported the presence of the pseudo-diphtheritic bacillus, and, therefore, this point cannot be cleared up until the third has been fully investigated, viz., are the Klebs-Loeffler bacillus and the Hoffman-Loeffler bacillus independent of each other? Under the microscope I have also placed a number of organisms associated with the names of Fraenkel and Friedlander, because some of the diplococci have been found in acute conditions of the tonsils. Under other microscopes will be seen non-pathogenic organisms which have led to confusion in bacteriological investigations, round, rod-shaped, spiral form, and, lastly, spores.

Dr. HOLBROOK CURTIS (New York), said: I consider it a distinguished

privilege to be called upon to discuss so able and exhaustive a paper as that which has just been read. The views of Dr. Wolfenden as regards the propriety and even the necessity of bacteriological confirmation of the presence of the Klebs-Loeffler bacillus in membranous, and ofttimes in what appears to be but simple lacunar inflammation of the tonsil, have been already anticipated in New York. The Board of Health have established stations in various parts of the city, where sterilized test tubes, containing a wire and pledget of cotton, may be obtained free of charge, with directions for making a primary cultivation. The swab plunged into the nutrient medium is sent to one of the laboratories, and, in from twelve to twenty-four hours, the result of the examination is returned to the sender. Apart from ascertaining whether the case is to be reported as one of diphtheria or no, this sharing of responsibility with the State as consultant frequently relieves one of serious annoyance and worry. In the present state of bacteriological research, clinical observations are of as great importance as ever for the verification of theories. If I understood the reader of the paper rightly, he observed that the prognosis was apt to be unfavourable in proportion to the number of streptococci found in connection with the Loeffler's bacilli in the membrane of diphtheria. It is quite easy of comprehension that more virulent toxines may result from favourable combinations of bacilli or their secretions. In this particular type I should be inclined to the view that the peculiar toxines involved were the cause of the profound constitutional poisoning, rather than the supposition that the presence of streptococci exerted any specific effect upon the virulence of the diphtheritic bacilli. We might argue also on purely theoretical grounds, that the massing of large white corpuscles, as described in follicular inflammations, was the performance of a phagocytic function, rather than possessing a diagnostic significance. We must all agree, however, upon one point, and that is, we have much to learn about the tonsils, their affections, and their function, and we may congratulate the writer of the paper upon having made a valuable contribution to our knowledge.

Mr. LENNOX BROWNE commenced by expressing his entire concurrence with the President's high appreciation of the valuable paper offered for discussion.

He remarked that while it was to a large extent an outcome of what Dr. Macintyre had offered to the Association on various occasions in previous sessions, it was in turn likely to prove fruitful of far-reaching results of the greatest possible practical value.

The speaker well remembered the shock of surprise which was occasioned by the opinion of Dr. Jacobi, of New York, first uttered at Glasgow in 1888, that every case of follicular tonsillitis was a possible focus of diphtheritic contagium; but there could be no doubt that daily experience, both bacteriological and clinical, was accumulating evidence in support of this statement.

Mr. Lennox Browne ventured to take some credit to himself as having been the first—certainly among English writers—to draw attention to the error of describing as follicular tonsillitis a disease which had nothing to do with the follicles, but which in truth attacked the crypts or

lacunæ. And although this error had been avoided in the body of the paper, it was to be regretted that it had been suggested in the title.

Coming to the subject of the discussion, he quite agreed with Dr. Wolfenden on the importance of insisting that the presence of membrane, its amount, and in a measure its consistence, depends almost entirely on the intensity of the inflammatory process; to which he would add also the age of the patient. For one was constantly seeing cases in adult life in which bacteriological examination during the attack and also the sequelæ proved it to be truly diphtheritic, though in the earlier stages no other local evidence had presented in the throat than that of hyperæmia, and this not always of even a high grade.

He also thought it important to insist that the Loeffler bacillus, and that only, must be taken as the irrefragable evidence of a true diphtheria, while the paralyses and other asthenic sequelæ are the results of the toxic action of the bacillary ptomaines.

Referring to Dr. Wolfenden's classification of tonsillar inflammations according to the organism present, it might be remarked that we are not yet in possession of full knowledge of the exact infective relation of streptococci, staphylococci, and pneumococci with the bacillus, a proof of which may be found in the fact that, though during an attack of scarlet fever the throat complications are not truly diphtheritic, the exudative inflammations which occasionally occur as sequelæ of this disease are said to be so. It is, however, worthy of notice that according to several observers, streptococci predominate in this variety of diphtheria, and as is well known inoculation with pure cultures of these does not produce false membrane, but only local inflammation. Especially to be mentioned in this connection was the opinion of Ruault, that these exudative inflammations might be classified as mono-microbian and poly-microbian, the former representing true diphtheria, the other false varieties. Possibly this classification might be more acceptable than Dr. Wolfenden's, to which Dr. Macintyre had taken exception; it certainly was more scientific.

Mr. Lennox Browne referred to the circumstance that he had advanced the ptomaine theory as a tenable hypothesis in the second edition of his book, published in 1887, before there were any actual facts to establish the conclusion. In deference to adverse criticism he had been weak enough to somewhat modify this opinion in his third edition (1890), but he had felt justified in re-asserting it all the more strongly in the fourth edition (1893), since, on the authority of the later researches of Ruault, Baginski and Booker, what had been previously propounded as a theory had now been established as a conclusion.

Dr. DUNDAS GRANT expressed his admiration for the exhaustive way in which Dr. Wolfenden had treated this important subject. He hoped that care and accuracy in clinical observation would not be lessened and all responsibility handed over to those who conducted the bacteriological examination. Although the clinical characters had been found to lead to different opinions from those derived—and correctly derived—from bacteriological examination, he hoped that the checking of the former by the latter would lead to greater accuracy in clinical diagnosis.

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He was the more hopeful of this from the comparative harmony pointed out by Dr. Park, of New York, in a very valuable paper published by him in the "Medical Record," and abstracted in the JOURNAL OF LARYNGOLOGY, showing the results of a very large number of observations. Although in this country we were greatly hampered in the application of the biological tests on mice or other animals, Dr. Grant thought we would in time learn to recognize the effects, local and general, of the various bacteria—staphylococci, streptococci, pneumococci, Klebs-Loeffler bacilli, etc.—on the human subject, and to diagnose them by these effects as clearly as the bacteriologist does by their action on tubes of blood-serum or agar-agar. This was only to be arrived at, however, by continually checking our results on the lines so well laid down in Dr. Wolfenden's paper. The Local Government or the County Councils might well be urged to afford facilities for the bacteriological examination of brushings from doubtful cases of angina, as was now done in New York. He suggested that it should be part of the duty of every medical officer of health to make such examinations at the public expense whenever called upon by the practitioner in attendance on such cases to do so.

Mr. MAYO COLLIER said that he had tried to follow Dr. Wolfenden in his very able and learned exposition on the number and nature of the bacilli that found a resting-place and set up mischief in the faucial tonsil. He could not imagine why Dr. Wolfenden had confined his remarks solely to the tonsil so-called, or why the bacilli should apparently direct their attention almost wholly to this unfortunate structure. There were other masses in the pharynx, larynx, and mouth and post-nasal space, that were equally tonsils, and yet they were apparently ignored, both by the bacilli and the reader of the paper.

The bacilli must have an equally free access to all these structures, and yet the great majority of inflammations, if due to bacilli, affected the faucial tonsil alone. It was impossible to deny this statement.

To diagnose affections of the throat on the positive or negative evidence of the bacilli present was theoretically excellent, but practically impossible and absurd.

Whilst cultivating your serum, and using the microscope, the patient would be kept in suspense, no diagnosis or treatment would be possible, and infection and death would be the not unlikely result of this highly scientific procedure.

One knows well that in the case of the most virulent throat affection, namely diphtheria, the local appearances were anything, from a slight blush to membrane of marked thickness. To accept the conclusions of the paper meant mental chaos, so far as the diagnosis of throat affections was concerned, and an inability to do more when confronted with such cases than look wise, shake one's head and call for a microscope.

Mr. LENNOX BROWNE, rising again, begged to remind Mr. Mayo Collier that the site of lacunar inflammations and diphtheritic manifestations was by no means limited to the faucial tonsils, and that attacks in the pharyngeal, lingual, and laryngeal tonsillar structures might probably be held responsible for extension of the disease in those regions. He

referred to his experience during an epidemic of diphtheria in 1887, in which two sisters, among others residing in the same school, had been attacked, one of whom he had attended suffering from pharyngo-laryngeal diphtheria, from which she recovered. The other sister had no throat symptoms, but died from perforative peritonitis, the result of diphtheritic enteritis—at least this was the opinion given by the late Dr. Wilson Fox, who saw the case.

With a view to making this discussion of real benefit to the world at large, Mr. Lennox Browne suggested that representation should be made to the Local Government Board, in order to obtain facilities for the regular examination by skilled bacteriologists of the exudations from suspicious cases, as were in force in the United States.

He took this opportunity of alluding to a point he had missed in his first remarks, viz., the connection between tonsillitis and rheumatism, his views on which had received very general recognition. The late Sir Andrew Clark, in reply to a letter from him, written in 1889, had suggested that many of the so-called pains associated with throat inflammations, as indeed much of rheumatism itself, might be due to a more or less pronounced pyæmic condition. The speaker was convinced that this was the case in some of the graver forms of tonsillitis, and it was possible that it was so in all.

Dr. LAW remarked that a most valuable and practical result would accrue from Dr. Wolfenden's very able paper if Mr. Browne's suggestion be carried out, and he would ask him to put it as a resolution to the meeting. He was sure that country practitioners, who have neither the time nor the opportunity, would much appreciate this convenient and ready means of establishing a scientific, and, as it were, official diagnosis. If experiments on animals should be required, such investigations would be performed by duly qualified agents.

Mr. WYATT WINGRAVE, in support of the view that acute tonsillitis was not purely local disease, mentioned cases which were associated with appendicitis and suppuration of synovial membranes.

Finally it was agreed that the President, Dr. Wolfenden, and Mr. Lennox Browne should form a committee to draw up a memorial, on the lines of Mr. Browne's suggestion, to the President of the Local Government Board.

Dr. MACINTYRE: Gentlemen,—I think you will agree with me that Dr. Wolfenden is thoroughly deserving of a most cordial vote of thanks for the careful, painstaking and scientific manner in which he has brought the subject before us. A glance at the text-books will show how little at present is understood or known about acute inflammations of the tonsils. The majority of writers depend upon clinical evidences for classification, and so we find the literature full of such terms as superficial, tonsillar angina, follicular tonsillitis, croupous tonsillitis, parenchymatous tonsillitis, and peri-tonsillar inflammation, and abscess. Briefly, the different classifications seem to rest upon a consideration of the symptoms exhibited by the different classes of patients, and these have been further subdivided from their anatomical relationship. All the same it must be evident to the student of etiology that all such classifications will one day disappear

when the causes become known to us. That a great deal of light has been thrown upon this subject from the etiological standpoint of late must be of great satisfaction to us, and it is for this reason that we feel so much indebted to Dr. Wolfenden for giving the Fellows of the Association an opportunity of contributing something, although each may do so from his own personal standpoint, clinically, pathologically, or otherwise.

Some of the French writers would have us in the present state of our knowledge change the classification into suppurative and non-suppurative anomalous, and these again into catarrhal, follicular, parenchymatous, or in the suppurative into tonsillar and peri-tonsillar conditions. While this may be an advance somewhat upon other classifications, it cannot be said that it is altogether satisfactory because, as I have already stated, no definite basis can be arrived at until we know something more about the causation of disease. Again, distinctions between superficial or follicular, if it be in the crypts, and parenchymatous must be one of degree, and it is almost impossible, studied from the microscopic point of view, to think of a superficial arrangement which will affect the membrane without to some extent involving the parenchyma. No doubt Dr. Wolfenden has done something in suggesting a scientific classification based upon the different forms found in these acute infectious diseases. It seems, however, incomplete at this time, and necessarily so, because the factors are not yet known. We know that some organisms produce mischief, but we do not know all of the organisms which do so. A study of the causation, as put down in our text-books, includes all that is usually spoken of in similar inflammatory conditions, and so we have lymphotism, heredity, rheumatism, climate, age, sex, alcohol, tobacco. But I think a study of acute tonsillitis, even if we do not accept the epidemic point of view, must be looked upon in many cases as a general or constitutional affection, of which we can only see the local manifestations in the enlarged tonsil or tonsils before us. No one can look at a patient suffering from acute inflammation of the tonsils and think of the great depression constitutionally which usually follows the disease without considering the constitutional effects to be due to the toxic elements introduced into the system, just as this is taking place in diphtheria, scarlatina, and other acute diseases.

I am by no means ignoring the consideration of rheumatism, because it is an undoubted fact that wherever you have a patient with such a constitutional affection as rheumatism or gout, and I might also say syphilis, you have a factor in the constitution which predisposes. But granting all this, the whole tendency of scientific thought is to search for the acute or active causes which set the things in motion, and in this way I think a great deal has yet to be done. One cannot help asking the questions, Are we passing through some transition stage, or passing phase of thought? In what direction is science tending?

A few years ago the general practitioner based his ideas upon two simple thoughts. If a case had evidence of acute tonsillitis with the formation of a membrane, albuminuria, affection of other organs, such as the pericardium, and, lastly, paralysis of the nervous system, the diagnosis

was clearly diphtheria. On the other hand, the absence of those symptoms would have indicated a non-diphtheritic sore throat.

We have now reason to believe that paralysis and the presence of albumen in the urine may be caused by the introduction of other organisms than those found in diphtheria. I have had cases under my care in the hospital (and one specially presents itself to my mind) where there was no suspicion of diphtheria, and yet there was acute tonsillitis, enlarged glands, general evidence of constitutional poisoning, and, in fact, a case suspiciously like typhoid fever shown *post-mortem* to be an extension of a local disorder of the throat producing this typhoid condition and complicating many of the viscera. If this be so, one is inclined to ask upon what grounds is diagnosis to be formed? If the later investigations of science have broken down many of the past ideal boundaries between non-diphtheritic and diphtheritic throat, and thereby caused some confusion, we have the greater satisfaction of knowing that it is providing for us still safer and more accurate methods of diagnosis, viz., the presence or absence of specific organisms characteristic of individual diseases. And it is for this reason and for many similar reasons that the majority of thinkers are inclined to look upon the different forms of acute tonsillitis as indicative of acute infective disorders, of which the throat symptoms are merely local manifestations.

I should have liked very much had we been able to undertake the subject of treatment in this discussion, and feel confident that at some future time the Fellows may find it to their advantage to enter upon this important question. It would seem quite clear that a great many of these serious conditions are due to the presence of pathogenic micro-organisms lodged in the crypts of the tonsils, that the application of ordinary antiseptics to the surface cannot do much good, and that complete eradication of the diseased tissues in which the organisms lie is the only safe method of preventing a recurrent tonsillar or peri-tonsillar abscess.

However, this and other questions must at this late hour be set aside, and I would simply call upon you, gentlemen, to award a very hearty vote of thanks to Dr. Wolfenden for the extremely valuable paper which he has brought before us to-night.

These remarks were unanimously endorsed by the Fellows.

THE NINETEENTH GENERAL MEETING,

Held October 12th, 1894.

President—Dr. J. MACINTYRE, Glasgow, *Chairman.*

Twenty-six Fellows and Visitors were present.

The minutes of the previous meeting were read and confirmed.

ELECTION OF OFFICERS.

Drs. WAGGETT and HUTCHISON, *Scrutineers.*

The result of the Ballot was announced as follows:—

President.—Dr. W. MCNEILL WHISTLER (London).

Vice-Presidents.

Dr. ED. WOAKES.
Dr. RICHD. A. HAYES (Dublin).
Mr. MAYO COLLIER.

Council.

Metropolitan:
Dr. ED. LAW.
Dr. DUNDAS GRANT.
Dr. FARQUHAR MATHESON.
Dr. N. WOLFENDEN.
Dr. J. MACINTYRE (*ex officio*).

Extra-Metropolitan:
Dr. BARCLAY BARON (Bristol).
Mr. F. MARSH (Birmingham).

Hon. Sec.—Dr. HEMINGTON PEGLER.

The following gentlemen were elected Fellows of the Association:—

RICHARD LAKE, F.R.C.S. (London).
JAMES WILSON, M.D. (Liverpool).

Dr. MACINTYRE gave notice of motion that he should propose at the next meeting: "That an additional Secretary be elected."

Dr. WHISTLER asked permission to withhold his former motion until the next meeting: "That the office of Treasurer be separated from that of Secretary." This was unanimously agreed to.

VOTE OF THANKS.

Mr. LENNOX BROWNE asked permission before Dr. Macintyre left the chair to put to the meeting a formal vote of thanks to the retiring President, whose special efforts and exceeding assiduity merited a special vote expressive of the gratitude of the Association. He referred to the fact that during his tenure of office Dr. Macintyre had made the journey

from Glasgow to London no less than eight times, involving railway travelling over some eight thousand miles. Although Dr. Macintyre had as an object for emulation the example of the previous President, Dr. Sandford, of Cork, he thought such devotion ought not to be allowed to pass without some record of their appreciation.

Dr. WHISTLER seconded the motion, observing that Dr. Macintyre's work spoke for itself, and the resolution was passed by acclamation.

Dr. MACINTYRE thanked the society in suitable terms for the appreciation they had shown of his efforts on behalf of the society. Any little trouble he might have been put to in attending the meetings of the society had, he said, been more than repaid by coming into contact with the gentlemen whom it had been his privilege to meet at the meetings. He could safely say that he had throughout done his best to further the interests of the Association, and his interest in its welfare would not cease on leaving the presidential chair.

He then called upon Dr. McNeill Whistler, the incoming President, to take the chair.

DR. WHISTLER'S ADDRESS.

Gentlemen,—The fulness of my appreciation of the great honour you have conferred on me, in electing me to be your President for the ensuing year, I cannot find words adequately to express.

The brilliant success that has marked the presidential terms of those who have preceded me in office confronts me at once with a grave difficulty, and fills me with no small amount of anxious apprehension lest I may fail to sustain, at least in some measure, the high standard achieved by them.

This is the one cloud that for the moment overshadows me. Its silver lining is the trust I place in the aid I shall receive from you in the fulfilment of the duties I have undertaken, and the hope I cling to that you will be always kindly indulgent to me in my efforts.

No trust could be confided to my keeping whose interests I would more zealously seek to promote, for it is the greatest satisfaction to me that this society—the founding of which it was my privilege to argue for at the Dublin meeting of the British Medical Association, and the establishment of which it was my great pleasure to work for, in conjunction with Dr. Hayes, Mr. Stoker, Mr. Lennox Browne, Dr. Macintyre, Dr. Hunter Mackenzie, Dr. Woakes, Dr. Dundas Grant, and others, should have reached that front rank which the early founders ventured to hope might one day crown their efforts. It has passed through storms—it has sailed safely into smooth seas—and no one is more glad than I am that all this is now relegated to past history. Far be it from me to dwell upon memories that it is the delight of all of us not to cherish. I only wish to tell you, now that the occasion is afforded me, how great a pleasure it has been to me to meet and work with all here again.

More I cannot say, excepting to offer you my assurance that during my term of office it shall be my aim to follow the bright examples set me, and that I will shirk no trouble or responsibility, nor spare myself any labour that can conduce to the continued welfare of this Association.

MEMORIAL TO THE LOCAL GOVERNMENT BOARD.

Mr. LENNOX BROWNE recalled to the recollection of the Fellows the fact that a special committee had been appointed to consider the question arising on Dr. Norris Wolfenden's paper, as to the better detection of infectious sore throats with a view to prompt isolation. The draft of the memorial had been submitted to the president, vice-presidents, ex-presidents and members of the Council for their signature, together with their suggestions. The memorial had since been formally presented to Mr. Fowler, President of the Local Government Board, to Sir Walter Foster, and to Dr. Thorne Thorne. He had also caused to be sent, unofficially, a copy to Sir Edwin Galsworthy, the chairman of the Metropolitan Asylums Board.

The Secretary then read letters, acknowledging receipt of the memorial, which was ordered to be printed in the *Transactions*.

On the suggestion of Dr. Macintyre and Dr. Sandford, it was resolved that copies of the memorial be also sent to the Presidents of the Irish and Scottish Local Government Boards.

"THE BRITISH LARYNGOLOGICAL AND RHINOLOGICAL ASSOCIATION.

"To the Right Honourable HENRY HARTLEY FOWLER, M.P.,
"President of the Local Government Board.

"Sir,—At a recent meeting of the British Laryngological and Rhinological Association, composed of physicians and surgeons from all parts of the empire, especially engaged in the study and treatment of diseases of the throat, a paper was read by Dr. Norris Wolfenden, emphasizing the importance of the early recognition of the acute infective diseases of the tonsils, and the pressing necessity for the isolation of patients suffering from these disorders.

"As a result of the discussion which followed, a resolution was proposed and carried that a representation should be made to your Honourable Board of the necessity for greater facility being afforded for bacteriological examination in these cases by the establishment of stations for the purpose, such as is done in the city of New York, the details of which will doubtless be familiar to you.

"The Association does not for a moment presume to even suggest the means by which these facilities could be granted to medical practitioners, but would only point out that, while it is evident that the average family attendant, who is the first to see these cases during the initial and therefore the most important epoch, is not in possession of either the requisite special knowledge or the facilities for pursuing such investigations, it must also be at once apparent that an accurate diagnosis at the commencement of these cases is of vital importance, not only to the individual attacked, but also for the protection of the community in general.

"Moreover, it need hardly be pointed out that many diseases in this region, which may be regarded as infectious, are not limited to diphtheria, though many of them, clinically, so closely resemble this disorder as to be only capable of differentiation by bacteriological methods.

"No true progress can be made in the proper classification of their relative virulence except by scientific research, and only by such a system can efficient notification be effected with a corresponding relief from the onerous responsibility which now presses on the medical profession in cases of doubtful diagnosis.

"It is confidently to be hoped that the early detection of such disorders, by

the means indicated, would eventually lead to the diminution of diphtheria and allied disorders, now so alarmingly on the increase.

"It may, therefore, well be brought within the scope and duties of the Medical Officers of Health and other officials under the control of your Department.

"The Association venture to think that on all these grounds, as well as on many others which they forbear from pressing, no apology is needed for bringing this matter under your consideration.

"We are, Sir,

"With high respect,

"Your most obedient Servants,

President—JOHN MACINTYRE, M.B., Surgeon for Diseases of Throat and Nose, Glasgow Royal Infirmary.

Vice-Presidents—W. MCNEILL WHISTLER, M.D., Physician to London Throat Hospital.
R. NORRIS WOLFENDEN, M.D., late Physician to Throat Hospital, Golden Square.
M. P. MAYO COLLIER, M.S. and M.B., late Surgeon, Throat and Ear Department, North-West London Hospital.

Ex-Presidents—PHILIP C. SMYLY, M.D., late President Royal College of Surgeons of Ireland.
LENNOX BROWNE, F.R.C.S., Senior Surgeon, Central London Throat, Nose, and Ear Hospital.
ARTHUR W. SANDFORD, M.D., Surgeon and Lecturer in Ophthalmology and Otology, Queen's College, Cork.

Members of Council—EDWARD LAW, M.D., Surgeon to London Throat Hospital.
EDWARD WOAKES, M.D., Senior Aural Surgeon and Lecturer, London Hospital.
WILLIAM MILLIGAN, M.D., Aural Surgeon and Lecturer, Owens College, Manchester.
RICHARD A. HAYES, M.D., Physician for Diseases of Throat, etc., Infirmary, Dublin.

V. H. WYATT WINGRAVE, Honorary Secretary, Assist.-Surgeon, Central London Throat, Nose, and Ear Hospital, 7, Taviton Street, Gordon Square, W.C."

Mr. LENNOX BROWNE showed a little girl, the subject of a curious *Malformation of the Pharynx.*

M. D., aged six. Admitted to the Central London Throat, Nose and Ear Hospital, September 17th, 1894.

The little girl is the eighth child of ten children, all of whom are alive and well, with the exception of the first, who died in convulsions, aged one year and nine months.

The family history on both sides is good, and there is no reason to suspect any syphilitic dyscrasia in either of the parents. The little patient had influenza three years ago, and scarlatina a year later. She has never had diphtheria or other throat trouble, nor is there any history of any inflammatory process in the larynx or pharynx.

The mother states that from her birth the child has always had difficulty in breathing, the intensity of which has, however, greatly varied

from time to time. Of late there has been stridor, and sometimes dyspnœa, even in the daytime and at rest, but no actual convulsion or cyanosis. The child sleeps with the mouth wide open, and snores loudly.

On examination a curious malformation is observed. It consists of a fleshy septum, which is attached above and in front to the soft palate, laterally to the mucous membrane covering the pterygoid processes, and posteriorly to the pharyngeal wall.

There is a more or less circular opening in the middle line, partially obscured by the uvula, in front of it. When the fauces are irritated this opening almost entirely closes, the free edges of the septum bellying up so as to give the appearance of closure of the isthmus by approximation of the posterior pillars, which, in fact, are not otherwise represented.

The finger introduced through this opening passes directly into the post-nasal space, which on the patient's first visit was found to be blocked by a considerable overgrowth of the pharyngeal tonsil. Below, the finger detects a pocket or pouch between the membranous septum and the posterior pharyngeal wall. There is no interference either with the passage of the larynx or with that of the pharynx below its middle third.

The faucial tonsils are somewhat enlarged.

The general appearance of the child is that of a mouth-breather; the nasal bones are flattened, and the complexion is pallid.

On September 24th, with curette and finger-nail, I removed a considerable mass of adenoid growth from the naso-pharynx through the aperture already described.

Since then she rests more naturally and snores less, although she still continues to sleep with her mouth open, and on the whole the child seems to have improved in her general health.

It is proposed to remove the fleshy membrane, to again curette the naso-pharynx, and, if necessary, to excise the enlarged faucial tonsils.

Remarks.—Congenital malformations of the pharynx, due to developmental abnormalities in the nasal or oral portions, are exceedingly rare, and in the preparation of a recent article I was unable to find one in the museum of the Royal College of Surgeons. This case is, therefore, of exceptional and possibly of unique interest.

Mr. MAYO COLLIER said that, during his somewhat extended period of office as demonstrator of anatomy at the London Hospital, he had opportunities of examining the muscles of the pharynx and larynx in a large number of cases. He maintained that the levator palati was at all times a continuous muscle from side to side, the fibres having no interval or point of insertion in the midline. In many cases the palato-pharyngeus extended nearly to the midline, its fibres arching inwards to their insertion as well as downwards to the posterior border of the thyroid cartilage. He had likewise found in very many cases a similar peculiar distribution of the palato-glossus muscle. The palato-glossus in many instances hid the tonsil, and, curving in, ran on to the tongue, and met its fellow of the opposite side at the midline. The fauces in such cases were heart-shaped and constricted. The disposition of these muscles was, he said, evidently to act as constrictors, and he looked upon Mr. Lennox Browne's case as an abnormal extension of a normal muscle of the pharynx.

Dr. DUNDAS GRANT observed that it had so far not been decided that the abnormality was congenital, and not the result of cicatricial adhesions of the posterior pillars of the fauces. He pointed out that there was a certain amount of air space beneath the transverse band, through which one could see the epiglottis. It occurred to him that possibly it might be due to adhesions of the posterior pillars of the fauces, by cicatricial contraction drawing them together with adhesion to the posterior wall of the pharynx. He admitted that it must be a very difficult question to decide, and he doubted whether even prolonged study of this particular case would clear up the question. It could only be compared with specimens of similar malformations as they were grouped.

The PRESIDENT thought the case a most interesting one. To give a definite opinion as to its exact nature was very difficult. It seemed to him that the appearances very much resembled those arising from cicatricial contraction. He raised the question whether it might not be the result of congenital syphilis, or possibly tubercle. He had not understood, and would like to know, whether the child had been under treatment for any acute throat symptoms, or any other specific ailment, before Mr. Browne had seen it. He referred to a case which he had seen some years ago (due to congenital syphilis), in which the pharyngeal stenosis was so intense that it was impossible to get any view of the larynx or find any entrance into the lower pharynx. The urgent and persistent dyspnœa necessitated tracheotomy, but the specially interesting feature was that there was no appreciable difficulty in swallowing during the long period in which the patient remained under observation.

Mr. WYATT WINGRAVE said that the septum was apparently attached laterally to the pterygo-palatine fold, and, sloping downwards and backwards, became merged with the posterior wall of the pharynx, so shutting off the naso-pharynx from the bucco-pharyngeal cavity. Just behind the uvula was an aperture, through which the finger could pass into a well-formed naso-pharynx. He suggested its probable origin as vertigial, in connection with the primitive velum, which separated the buccal involution from the fore gut.

Mr. MAYO COLLIER said he did not understand how it could migrate from the anterior to the posterior wall.

Mr. LENNOX BROWNE, in reply, said he of course expected that syphilis would be suggested as an etiological factor, but he thought this hypothesis had been pretty well disposed of by the family and individual history. No constitutional treatment had been prescribed because, in fact, there had not been the slightest constitutional indication.

Mr. LENNOX BROWNE. *A Case of Nasal Synostosis under Treatment.*

My object in relating a case of nasal synostosis is, firstly, to draw attention to the most common cause as one to be by care avoided, and secondly, to a point or two in treatment.

I think it will be generally admitted that almost every case of a bony bridge between the septum and a turbinal is an untoward result of cauterization, and whether it be that the exostosis begins from an irritated periosteum or perichondrium is unimportant; the lesson to be

learnt is that the cases in which the septum ought ever to be intentionally touched at all with a caustic are exceedingly rare and exceptional, and that every precaution should be observed against its accidental occurrence.

The case under consideration is that of a young gentleman, aged nineteen, of Jewish faith, the third son in a family of seven, who came under my care on September 19th of the present year.

Briefly the history was as follows :—So far as he could remember there had been no injury to the nose, but in December last he was treated in Berlin for polypus in the left nostril. After removal of polypi the nostril was cauterized on several occasions, and some adenoid growths were removed from the naso-pharynx. It is only to be added that he was told by his German physician to have skilled treatment on his return to London, and was warned that if he neglected to do so he might be liable to have an adhesion between the walls of the nostril. As a matter of fact, he did not follow this advice for nearly nine months.

When I saw him I found the left nostril almost entirely closed, by a large horizontal spur growing from the lower part of the left side of the septum nasi, forming a bony bridge across the middle third of the inferior meatus, and extending far back. The faucial tonsils were both hypertrophied, and the lacunæ inflamed ; the uvula pendulous and relaxed ; and on digital examination of the naso-pharynx I found some recurrence of the hypertrophy of the pharyngeal tonsil.

On the following day, the patient being anæsthetized with nitrous oxide gas, I removed the enlarged tonsils, shortened the uvula, and cleared the vault of the pharynx of all remnant of adenoid growths. Some measure of relief of his symptoms attended this procedure.

On October 2nd, under the same anæsthetic, supplemented by a small quantity of ether, I, by means of the saw, first separated the septal outgrowth from the left turbinal, and then removed the "bridge," which was formed by a large spur, partly bony and partly cartilaginous, which, denuded of its soft tissues, is shown as a specimen. There was free hæmorrhage at the time, but this ceased on plugging with cotton wool soaked in a fifteen per cent. solution of cocaine in hazeline. The two walls of the nostril were kept apart by a plug of wool, dusted over with aristol.

I may remark, with regard to plugs, that we may pass a considerable quantity of wool or lint into the nostril without passing it very far along the floor of the meatus, and I therefore now adopt the plan of winding the wool on a piece of malleable wire to produce the necessary stiffness.

The later treatment illustrates the second point of interest, namely, the extreme difficulty in preventing the reformation of these bridges; and, acting on a suggestion of Dr. Holbrook Curtis, I have been employing, first, thin layers, and later, thin tubes of tin or lead sheeting, which appear to have the effect of keeping down the granulations better than bougies or canulæ of soft or hard rubber or of celluloid. The case is by no means yet cured, but even thus early I have reported it, with the hope of eliciting some expression of opinion on the points I have taken up—first, the question of cauterizing the septum, and secondly, how best to

permanently overcome the disposition to synostosis when once it has taken place.

There is just one other point of practical interest. As I have often said before, it is very difficult in looking along the tunnel of the nostril, or down the larynx, to estimate the actual thickness of any obstruction seen on end, and it frequently happens that from ignorance on this point a spur or bridge is incompletely removed. In the case of a nasal bridge this difficulty is overcome by employment of a hooked probe, which, passed along the floor of the nostril, can easily determine the thickness of tissue to be cut through.

Dr. DUNDAS GRANT said there was no doubt as to the seriousness to the patient of the presence of union between the septum and the turbinated bodies. In order to prevent such adhesions it was important to reduce any enlargement of the turbinated body before proceeding to operate upon the septum. He did not mean by removing the turbinated body, but by pinning down the mucous membrane. In the disturbance of equilibrium which took place in the nose after an operation, the turgescence of the turbinated bones was likely to be exaggerated, and there was a tendency to a greater amount of swelling than would have been the case had greater attention been paid to it beforehand. He also insisted on the necessity for drying the cavity before introducing the cautery, as otherwise the hot metal would give rise to a scalding vapour which would injure the neighbouring mucous membrane, and so pave the way to the formation of adhesions. On one occasion he had broken the adhesions, but they had reformed, so he shaved away the projection on the septum and removed the projecting piece of the turbinated bone with a knife. He admitted that this seemed rather much to do unless they were driven to it, but he believed there were cases in which no other plan would enable them to deal with it. It was very often impossible to see clearly what one was doing, and the probe must often be used to make out the limits and dimensions of any spur, etc., which it might be necessary to remove.

Mr. LENNOX BROWNE, in reply, said he wished to draw attention to the great desirability in cauterizing turbinals of protecting the septum. Every year he met with cases in which damage had been inflicted in this way. He had never seen a bridge formed simply as the result of the removal of a spur. His rule of practice was not to interfere in the case of a spur unless it *touched* the turbinal—that being the main indication for surgical procedure—and he always endeavoured to effect a reduction of the soft tissues of a large turbinal before operating on any septal prominence of cartilage or bone.

Mr. MAYO COLLIER. I. *Abscess of Frontal Sinus.*

This case is one of abscess of the frontal sinus followed by polypoid degeneration of the mucous membrane as exhibited to you at our last meeting. I have trephined his frontal sinus and removed the polypi, and I now present him to you cured, and very much improved, both mentally and physically. The method I adopted in draining the frontal sinus has the recommendation of novelty, simplicity, and efficiency. It consists of

simply passing a piece of tubing into the nose, so as to fairly fill the infundibulum. When ablutions of the sinus are required, simply stretching the tubing will permit fluid to pass from the sinus into the nose. (Mr. Collier showed a skull with the tubing passed from the frontal sinus into the nose, and demonstrated the method of drainage.)

II. *Case of Severe Chronic Facial Neuralgia due to Necrosis of Middle Turbinated Bone.*

My next case is one of even greater interest than the last, because up to this these cases have rested entirely in the hands of the specialists on nervous diseases, and I make bold to say, as in this and many other instances, the cause of their troubles has not been recognized, and extensive and serious operations on the fifth nerve have been performed, when all the time the origin of the nerve affection was in the nose.

Only within the last few months two such cases have come under my observation, introduced to my notice by my colleagues on the chance of my finding disease in the nasal cavities.

The man before you is a relieving officer in the East End aged about fifty. He has had intolerable facial neuralgia in the infra-orbital region, lips, tongue, and mouth, now for some five years, rendering life almost insupportable. Medicines had entirely failed to give relief. As you will see, all his teeth have been removed in the hope of affording relief. Change of air, electricity, and every mode of treatment has only ended in disappointment. The case was sent to me, and admitted into hospital. After a careful examination of the parts nothing in the mouth, teeth, antrum, ear, or neck could be discovered as likely to account for his troubles. An examination of the nose showed marked nasal obstruction on the same side, and a probe revealed necrosis, with several polypi on the middle turbinated bone. These were at once removed with the cold snare, and I present the case to you as cured, and entirely relieved of his distressing condition.

III. *Headache with Diseased Middle Turbinal.*

The next case is one of still, if possible, greater interest, because many of these cases in the hands of the general physician remain entirely unrelieved, and are doomed to a life embittered by chronic headache. This poor woman, aged sixty-four, was sent me by Dr. H. Campbell, the author of an excellent work on headache. Briefly, she has never been free from headache on the left side for five years, and suffers severe exacerbation at times. She has complained of pain in the throat and post-nasal space also during the time, and for this she has been treated in the Golden Square Hospital, the Central London Hospital, and other similar institutions, but without relief. After a careful general examination an inspection of the nose revealed extensive disease of the middle turbinated bone on the left side. This was at once removed under cocaine, and I have brought the specimen, a unique one, for your inspection. The operation was followed by almost immediate relief, and I present the case to you as another illustration of what nasal surgery can do.

Dr. DUNDAS GRANT observed that the subject of headache in connection with nasal disease was one that would come more and more into prominence. He called attention to the original work by Bresgen on the subject of headache associated with disease of the nose. That gentleman's cases included not only such cases as the author's, but also in association with deformities and diseases of the sinuses. He admitted that one's attention having been devoted to any particular point, too much stress might be laid on any particular symptom, but he himself had met with many cases of headache apparently due to swelling of the turbinated bone. He pointed out that the complaint of pain in the nose due to this cause was tolerably common. Some of the most illustrative cases were those shown at the meeting of the British Medical Association by Dr. Hill. Dr. Grant had cured headaches by reducing the swelling by means of the galvanic cautery, or with the snare, or else by means of a convenient form of forceps, analogous to the conchotome devised by Hartmann. He had devised a simpler instrument for the purpose. He had also had some cases of headache associated with disease of the sphenoidal sinus. He doubted whether all rhinologists had a clear idea of the delimitations of this cavity. It was long before he himself found how near to touch the sphenoidal sinus was. On introducing the probe one often felt what seemed like bare bone. He had syringed out the sphenoidal sinus in several such cases, and had been able to relieve them, and recalled that he had shown two cases of sphenoidal disease at the last meeting, in which headache was a prominent symptom.

Dr. CAGNEY said it was impossible to exaggerate the importance of the bearing of rhinology on medicine. It was more by chance than anything else that he had been enabled to see the case in question, of which he proposed to publish the notes in full elsewhere. A patient, a woman, came to him saying she had suffered from neuralgia for twelve years, and wanted an operation performed. He had warned the patient that the operation was difficult, and possibly unsatisfactory, but she insisted, so he took her to see Mr. Horsley. He used electricity to alleviate the pain, but it recurred. Mr. Collier happened to be visiting him, and his attention was called to the case. He examined her and found dead bone, of which he removed a considerable quantity, and the patient was at present quite well, although before the operation she had suffered for twelve years from almost intolerable pain.

He took great interest also in the association of headache with nasal disease, and related the case of a lady whom he had seen who suffered from intense headache. She had all the appearances of a person who breathed through the mouth, so he examined the nose. There was no passage of air through that organ, so he sent her to a nasal specialist. He elicited the fact that an operation of some kind had been performed years before by the patient's brother, a surgeon in Hanover, but the headache had returned. He had inserted a little silver instrument used in dilating the alæ of the nose, and as long as she wore this she never again suffered from headache. He thought it was something more than a coincidence, and he thought these cases could be cured by proper treatment directed to the nasal condition.

Dr. DUNDAS GRANT read a paper on *Cases of Suppuration of the Antrum of Highmore, treated by means of Krause's Trocar.*

In the treatment of suppuration in the antrum of Highmore, it seems to me that our attention has been purposely too closely rivetted upon Cooper's method of irrigation through an opening in the alveolar process to the detriment of other methods, which, if not called for in all cases, have certainly their advantages in some, whether employed alone or in combination with the one we are most accustomed to employ. For this there are many reasons, some of great force, and others, in my opinion, somewhat over-rated. In favour of the adoption of *the alveolar method* we have the following facts :—

Firstly : The disease so often arises from an affection of the teeth, the removal of which forms the first step to the successful treatment of the disease, and this extraction leaves sometimes a ready-made passage into the antrum, but in any case one which can be completed with the greatest ease. Secondly : The opening is in the most dependent position, which makes it on general principles the most desirable one for drainage. The third fact is that a communication between the antrum and the mouth is absolutely uninjurious. Fourthly : The patient can practise irrigation through it without the intervention of the surgeon. This I consider the great and crowning advantage, possibly the only one. The process is, however, open at the same time in many cases to the following objections :—Firstly : it is not always an easy matter to hit off the antrum in making an opening through the alveolar process —there may be great thickness of bone, and the antrum may be a small one, and the edge of the alveolar process projects beyond it, and furthermore, if there is a considerable dehiscence of the bone on the outer surface of the socket for the teeth, a condition which we must all have seen on the skull. The unsuccessful puncture may consequently cause great pain, and the subsequent syringing may result in the extravasation of liquid into the cellular tissue. Secondly : in irrigation the alveolar opening is used as an aperture of entrance for the fluid instead of one of exit, for which its dependent position so well adapts it, and in the irrigation the tip of the syringe is higher than the floor of the cavity, in which there are often depressions that are not exposed to the direct impact of the fluids from the syringe. Thirdly : in cases where the disease is unconnected with the teeth and no carious tooth is present, the whole set being complete, it involves the removal of a useful and beautiful structure, to which the patient may very properly object. Fourthly : the results of treatment, though brilliant to a degree, when we consider the neglect with which such cases were formerly treated, are very often only partially successful as far as cure is concerned, in spite of very prolonged practice.

Perforation through the inferior meatus has advantages which should encourage us to give the method a more favourable trial than we have hitherto been disposed to do in our exclusive appreciation of the alveolar operation. Its advantages are :—Firstly : that it confines the outflow of discharge to the nose, not thereby involving any communication with the mouth. Secondly : it is easily performed under local anæsthesia by

means of cocaine or the short general anæsthesia induced by nitrous oxide. Thirdly: it is easily used by the surgeon for irrigation by Krause's instrument. Fourthly: it does not involve the removal of a healthy tooth; and lastly: it greatly expedites the recovery.

The objections to it, however, must not be left out of account, and they are:—Firstly: that it is not at the most dependent part, though in point of fact it is extremely near it. Secondly: its performance requires a certain skill on the part of the operator, whereas the alveolar opening can be performed, if necessary, by any competent dental surgeon. Thirdly: it requires the aid of the surgeon each time irrigation has to be practised; and fourthly; the opening tends to close with considerable rapidity.

Now, I hold that the dependence of the opening is, as I have already said, of little moment; that with a suitable instrument, such as I show you, the operation is not a difficult one, and, if the access to the inferior meatus is not sufficiently free, it is a simple matter to remove the anterior portion of the inferior turbinated body either by means of a punch-forceps or an ordinary pair of bent scissors and a wire snare. The irrigation certainly is not likely to be practicable in the patient's own hands, but when once the opening is made there is no reason why the irrigation should not after the first few times be carried out by the patient's private medical attendant, one great advantage being, to my mind, that the number of irrigations required is very much less than by the alveolar method.

The mode of operation hardly calls for description. Krause's instrument, a slightly curved trocar, very similar to that used for the tapping of the bladder through the rectum, but somewhat shorter, and as sharp as possible, is introduced into the inferior meatus after thorough cocainization of both surfaces of the inferior turbinated body, which in any case is necessary for facility of access, whether general anæsthesia be induced or not. The point of the trocar is withdrawn within the canula, and pushed into the meatus a distance of about one and a quarter inches. The point is then projected, pushed upwards and backwards, and then very cautiously forced, with more or less of a crunching sound, through the outer wall of the meatus. The trocar is next withdrawn and the canula pushed inwards. It will be felt, if in the antrum, as it can hardly fail to be, to impinge against the posterior wall of that cavity. The syringe is then adapted to the outer orifice of the canula, and a warm solution of boracic acid is injected, and the contents are thus washed out through the natural orifice. The canula may after this be removed. Next day the canula is reintroduced, but this again under cocaine, and this time by means of a blunt obturator in place of a trocar. This is then repeated at gradually-increasing intervals, and in suitable cases very gratifying results may be speedily obtained, although their ultimate value is a matter for further experience. It is not merely as an operation by itself that this proceeding is valuable, but it has a place as an adjunct to the alveolar operation, as in several cases where the progress was extremely and disappointingly slow I have seen a marvellous and rapid improvement as soon as this inferior meatal irrigation was added to that practised through the alveolus. In addition to being useful for the introduction of an irrigating fluid, it is

convenient also for the insufflation of powders. The rapidity with which the opening closes is at present a considerable disadvantage, but the opening can be enlarged by means of a burr, worked either by hand or by means of a dental engine, and I am at present devising an instrument for enlarging this opening, to which I hope to draw your attention upon an early occasion.

The first case is that of a young man, under treatment at the Hospital for Nervous Disease on account of epileptic fits. When he was referred to me he had a continual stuffiness in the nose, with purulent discharge. This was most marked on the left side, and the discharge had an offensive odour, recognizable by the patient, and comparable to that of a dental abscess. He had several very bad teeth in the left side of the upper jaw. There was a quantity of creamy pus in the left middle meatus, and the middle and inferior turbinated bodies were sodden-looking. The presence of pus in the antrum was further suggested by the darkness on trans-illumination, and proved by exploratory irrigation by means of Lichtwitz's trocar, the use of which I brought before the notice of this Association. I made a perforation into the antrum by means of a dental drill, after the extraction of the first molar, and washed out the cavity by means of the ordinary antrum syringe. There was a free flow through the nostril, but the introduction of the tube caused considerable pain, and some fulness of the cheek. I therefore abandoned the method after one or two occasions, no very obvious improvement having taken place. Thinking this a fair case for a trial of the intra-nasal method, I cocainized he inferior meatus, and with very little difficulty pushed the point of Krause's trocar into the antrum. It is now a little over a month since this was done. The opening in the alveolus rapidly closed, and the cavity has been washed out with weak sanitas or boric lotion three times a week with such excellent effect that now there is no discharge whatever from the nose, the passage is free, and the patient enjoys a degree of comfort to which he has long been a stranger.

The next is the patient who has been before the notice of the Association on two occasions as an instance of frontal sinusitis. It may be remembered by some of the Fellows present that on his first coming under my care I was able to assure myself, by means of transillumination and of exploratory irrigation, that the maxillary antrum was free from pus, and that I operated on the frontal sinus by means of an external opening. In spite of the comparatively favourable course of the case as regards the frontal sinus, there continued to be a greater nasal discharge than the disease of that cavity would account for. I did not think of the possible involvement of the antrum till some time after, when, on transillumination and irrigation, I found ample evidence of pus in that chamber. As this was obviously set up by extension from the frontal sinus, and was therefore of nasal and not of dental origin, I determined to submit it to intra-nasal treatment only, in spite of the fact that there were hiatuses in the continuity of the dental arch. I therefore introduced Krause's trocar, and used the same simple injections as in the other case, thrice, and occasionally only twice a week, with the result that there is now absolutely no purulent discharge from the nose. In order to facilitate the intro-

duction of the trocar I removed the anterior extremity of the inferior turbinated body by means of a punch-forceps, similar to the instrument I now show you, the blades of which are modelled on those of Hartmann's conchotome.

In the case of a lady on whom I operated by Cooper's method several months ago, she employed all sorts of solutions with great assiduity with considerable benefit, yet no lasting improvement; but when I made use of Krause's trocar and canula a most striking diminution in the amount of discharge at once took place, and the patient, though not yet cured, is progressing much more rapidly than before. In her case I ablated the anterior extremity of the inferior turbinal by means of scissors and snare.

In another case, that of a gentleman with ethmoidal disease in addition to empyema of the antrum, similar benefit ensued after the use of Krause's trocar in addition to the alveolar opening. He had to use his syringe night and morning, or even oftener, and with only partial relief to the stuffiness, but since the adoption of Krause's method he is quite comfortable if syringed every three days, the succulent condition of the middle and inferior turbinated bodies having notably diminished.

I am conscious that this communication is somewhat premature, and that subsequent experience will show that there is only a limited field of applicability for the intra-nasal method—still I maintain that there is a field, and I trust we shall arrive at the data which will enable us to mark out the limitations.

I should recommend its use (1) in all cases arising from intra-nasal causes; (2) in all cases in which there is no absence or disease of teeth. Further, I should give it a trial as an adjunct to the alveolar method of treatment when this gives unsatisfactory results, before resorting to the ultimate, though eminently successful, operation by means of a large opening on the outer wall of the antrum.

Mr. JOHN BARK (Liverpool) said Dr. Grant had not mentioned in the treatment of the antrum what he himself considered the most surgical method, viz., puncture through the canine fossa. This enabled the patient to flush out the cavity himself, and in cases where the suppuration was due to polypi or granulations, the opening could be made much larger, and thus the cavity might be curetted. In only two cases had he endeavoured to treat by perforation through the inferior meatus, a procedure which presented the disadvantages of giving rise to an irritating discharge from the nose, which was apt to set up disagreeable erythema of the upper lip, so that he had to open the canine fossa after all.

Dr. SCANES SPICER said he had been in the habit of opening the abscess through the canine fossa, combined with the plan suggested by Dr. Grant. At present he always commenced at once with this combined plan, which he had employed in some twenty cases. He thought it presented considerable advantages over all other plans, and the patients recovered in a month or six weeks. As a matter of fact he had never succeeded in thoroughly curing a case by any other method. He admitted that the operation knocked the patient up for a week or two with traumatic fever, but from that time they invariably entered on the

path of recovery. He looked upon curetting of the antrum and removal of the thick granulations as very important. In most of his cases he had found polypi. He did not see how these could be got out unless a large opening were made through which to curette.

Dr. HILL observed that if there were any polypoid masses it was evident that no amount of syringing could cure the case, though the treatment might afford some relief. He said that in the next case of the kind he would certainly try the radical operation in the first instance. In the last three cases at St. Mary's Hospital, Mr. Lane had made an opening, and they had all done well.

Dr. MILLIGAN urged that the alveolar method of opening and draining the maxillary antrum had been somewhat unjustly passed over. He had treated a considerable number of cases by this method, and in many had attained a satisfactory result. They had perhaps not been cases of the most inveterate form, but had still been fairly typical. He desired to show a small apparatus by means of which the patient could carry out the irrigation himself. The instrument consisted of a rectangular silver canula, carrying a movable platform, upon which rested a thick india-rubber disc. This was introduced into the antral cavity, and irrigation effected upon the *syphon* principle. The patient could in this way easily irrigate the cavity. He had tried other methods of opening the antrum, but thought that in those cases where the antral suppuration was secondary to dental disease, that of the alveolar method should first of all be tried, as being the simpler and less serious manipulation.

Dr. GRANT, in reply, said that there could be no question that something more than the alveolar operation was required, but he hesitated to admit that the combined operation should be performed forthwith. They must all have seen cases in which the nasal treatment had alone sufficed to effect a cure. If one could tell beforehand that there was a polypus, he would agree to the proposition, but this they could not do. If these cases relapsed, he promised to bring them once again before the society. A great deal of the success attending Dr. Milligan's operation was due to the size of the opening. When the disease arose from teeth, he was sure that that was the proper method to pursue. If this would necessitate the removal of a healthy tooth, then the intra-nasal method should be given a trial.

Mr. BARK (Liverpool). *Case of Nasal Calculus.*

Jane D., aged twenty-six, presented herself at the throat department of the Liverpool Stanley Hospital on the 17th November, 1893. She complained of blockage of the right nostril, purulent discharge, frontal headache, and epiphora.

These symptoms started about three years before, and had gradually become more troublesome and distressing. On opening up the right nostril by the insertion of cocaine plugs and examining by anterior rhinoscopy, a lump of jelly-like material was seen, with white calcareous points shining through. This mass was situated on the floor of the nose, between the inferior turbinated bone and the septum. By means of the probe a distinct grating could be felt and the presence of rhinolith

diagnosed. It was quite immovable, being evidently firmly imbedded in granulations.

With the patient under chloroform, the stone was with difficulty released from its bed by means of strong forceps. There was rather profuse hæmorrhage, necessitating the plugging of the right nasal cavity with iodoform gauze for twenty-four hours. On examination, a few days after the removal of the plug, the floor was seen covered by large granulations, in which the stone had been firmly fixed. These were removed by the cold snare and galvano-cautery. After the operation, the nostrils were sprayed with an alkaline antiseptic fluid, and the right side insufflated with aristol.

The patient was seen by me about two months ago. All unpleasant symptoms had disappeared, and the affected side of the nose was quite clear.

The calculus is evidently of the soft or phosphatic variety usually found in the nose. According to Schech ("Diseases of the Mouth, Throat, and Nose," 1886, p. 258), those analyzed were composed chiefly of phosphate and carbonate of lime, with organic matter and a trace of iron.

The stone is of so soft a nature that I feared to have a section made until I had shown it at this society; so that the question as to the presence of a nucleus or its character must be left until later on.

Mr. WINGRAVE showed a rhinolith which he had removed from a nostril some months since. It was now in pieces, having been broken up in searching for a nucleus, but none was found. It was removed from a girl of sixteen, and was imbedded between the middle concha and the bulla ethmoidalis.

Dr. MILLIGAN. *Case of Sero-Mucous Cyst of the anterior part of the Left Nasal Fossa.*

The patient, a female, aged forty-one, had noticed the existence of a rounded swelling immediately under the ala of the left nostril for the past few years. At no time had there been any pain. The only symptoms complained of were partial obstruction in the left nasal passage, and the discomfort incident to the presence of a certain amount of facial deformity. She was unable to account for the presence of this swelling and was unaware of any injury to the part at any time. Her previous general health had not been good. Both mammæ had been removed for schirrhus cancer early in 1892.

Upon examination, a swelling of about the size of a walnut was found under cover of the left ala nasi, projecting upwards into the vestibule and reaching nearly to the anterior extremity of the inferior turbinated body. The tumour was painless upon manipulation, easily movable, in no place adherent to the bone, and was evidently tense from the presence of fluid. Of late it had increased somewhat in size. The patient had previously had the cyst punctured when under treatment at another hospital, but rapid refilling had taken place. It was accordingly decided to expose the cyst and dissect it out. Accordingly an incision one inch long was made under chloroform at the junction of the cheek and gum of the left side, and the parts carefully dissected up. In this way the cyst was readily exposed. Unfortunately, during

the course of the dissection the wall was ruptured and the contents, consisting of muco-purulent fluid, escaped. The cyst wall was dissected away as carefully as possible, the parts well scraped with a small Volkmann's spoon, and the cavity packed with iodoform gauze.

During the first forty-eight hours considerable inflammatory œdema resulted, and the temperature rose to 100° F. This shortly subsided, and in a few days the patient expressed herself as feeling well.

Such cysts are of rare occurrence, and a search through the literature of the subject shows that only a few cases have been recorded. Chatellier (JOURNAL OF LARYNGOLOGY, April, 1892) records two such cases, and considers that they are caused at times from obstruction to a gland duct, that they are in fact retention cysts. Zuckerkandl ("Normale und Patholog. Anatomie des Nasenhöhle," 1882, vol. i.) records the case of a cyst the size of a walnut occurring under the mucous membrane at the anterior extremity of the left nasal passage, which after puncturing was found to contain a honey-like fluid. McBride ("Diseases of the Nose, Throat, and Ear") also records two cases. Knapp ("Archiv. of Otolog.," vol. xxiii. 1 and 2) records a case as occurring in a woman aged forty-seven. A soft fluctuating tumour with resistant walls could be felt under the skin adjacent to the base of the wing, and in the vestibule of the left nasal passage. It was connected with the periosteum and contained a clear mucoid fluid.

Regarding the methods of treatment, evacuation of the contents either by incision or by aspiration does not appear to afford much satisfaction. Recurrence is almost invariable. The application of caustics or of the electro-cautery to the interior of the sac, although somewhat tedious, has yielded satisfactory results.

Extirpation of the whole cyst seems, however, to bring about complete cure. This may be accomplished either by Rouge's method of reflecting the upper lip and so exposing the cyst wall, which is then carefully dissected out, or by Diffenbach's plan of making an incision along the base of the ala nasi, exposing the cyst and dissecting it out. It is important that the whole of the wall should be removed, otherwise refilling and recurrence is prone to take place.

Dr. SCANES SPICER said he had seen a very similar case. He had cut out a piece of the wall and plugged it with silk. It got well in two or three days, but he confessed that the etiology of these cysts was very obscure.

Mr. BARK said he had done Rouge's operation on two or three occasions, and he found he could get very little more room than through the ordinary nasal channel, while on the other hand it was a bloody and unpleasant operation.

Dr. MILLIGAN, in reply, said that he thought the operation certainly gave rather more room.

Mr. WYATT WINGRAVE. *Case of Cervical Fistula communicating with the Pharynx.*

The patient, a man, aged twenty-four, sought advice at the Central London Throat and Ear Hospital for a "discharging wound in the neck,"

with the following history: Two years ago he had a left-sided quinsy which burst in the usual way. On the following day he noticed a tender swelling behind the angle of the left jaw, which he poulticed for three days. "As it did not seem inclined to burst," his medical attendant, Dr. Knight, opened it and let out some pus. Since then he has suffered from a constant discharge externally, and frequent appearance of nasty-tasting stuff in the throat. On examination a ragged depression was seen in the left tonsil covered with pus. A probe was passed through the external sinus to a depth of two and three-quarter inches upwards and inwards; it did not appear internally, but could be distinctly felt through the substance of the left tonsil. On injecting the sinus, fluid readily entered the throat, and he complains that it does so when he syringes it out himself. I confirmed this myself on several occasions. At the last attempt, however, I was unsuccessful. Some pocketing of pus below the wound necessitated another opening. The discharge has gradually diminished, and the probe only passes about an inch and a half, but even now he says that occasionally fluid passes into the throat whilst injecting.

The interest of the case obviously rests upon the relation between the original quinsy and the fistulous track. Is it a case of suppuration in a previously existing but unrecognized branchial cleft? Has the pus burrowed to the surface through the deep cervical fascia? or is it simply a result of gland infection and suppuration?

Dr. DUNDAS GRANT. *Case of Papillomata of the Larynx removed by the Author with his Laryngeal Forceps.*

This was a case of a young lady, engaged in teaching, suffering from loss of voice of about seven months' duration. She was found to have a growth upon her right vocal cord, and one on the left, both in the anterior third. The one on the right cord was of considerable size, its length being equal to a quarter of that of the vocal cord. It was a light pinkish-grey colour, and with somewhat rough surface, appeared to be chiefly on the upper surface of the cord, but projected so as to partially overlap the left cord. The other was similar in character, but very much smaller, being not larger than a pin's head. By means of Dr. Grant's safe endo-laryngeal cutting forceps a large portion of the growth on the right side was removed, the anterior portions of the ventricular bands being pinched and somewhat lacerated from their having crowded into the forceps. Immediately the voice was restored to a very considerable extent. The patient complained of a little pain, but this passed off in a short time. Two days later the voice was found to have again lost its tone, and on inspection it was found that the small growth on the left vocal cord was still unremoved, the right cord being still raw and congested. It was seen that this little growth prevented the apposition of the cords just sufficiently to prevent the current of air from setting them in vibration, the space between them behind the region of the growth being very evident on attempted phonation.

After another day's rest the forceps were again applied and the small growth removed completely. The voice was then powerful, but hoarse. There still remained on the upper surface of the right cord a portion of

the original growth, but as the voice was restored to usefulness, and there was no impediment to respiration, it was considered advisable to leave well alone and to abstain from further operative treatment, it being determined to make use of applications of a solution of perchloride of iron, and along with this to give the patient the benefit of a course of arsenic internally. A microscopical section of the small growth from the left cord was made by Dr. Pegler and shown to the Association. The section showed most beautifully the structure of a simple papilloma. The effect on the voice produced by the removal of the extremely small growth on the edge of the left vocal cord was most striking.

Mr. LENNOX BROWNE said, with regard to the last remark of Dr. Grant, that it was and had long been well known that a growth might spring from the side of the vocal cords and from the posterior commissure of the larynx with comparatively little interference with the voice, whereas the very smallest growth in the anterior commissure would prevent approximation of the cords in front and be absolutely fatal to phonation.

Mr. STOKER suggested the application of the galvano-cautery to the thickening on the right vocal cord. He recalled an aphorism of the late Sir Morell Mackenzie's that, after restoring the voice to a certain extent it was well to leave well alone, for it often happened that the result of subsequent attempts to improve the voice was to forfeit all that had been gained by previous operative interference.

Dr. DUNDAS GRANT. *A Case of cured Lupus of the Nose and Palate.*

This was a case of a young lady who came before the Association at one of its earliest meetings, when she had a very distinct lupus ulcer on the hard palate just behind the incisor teeth, and also in the right nostril. On the tip of her nose there was a cicatricial patch remaining as the result of an operation for the destruction of a patch of the same disease in that position. At that time the lupus material was scraped away from the interior of the nose and from the palate, and the galvano-cautery was freely used in both situations. The patient was then provided with a weak cocaine lotion, and a twenty per cent. solution of lactic acid for application to the palate at home; while in the nose she made a similar use of an ointment containing twenty grains of salicylic acid in the ounce, and internally she took small doses of liquor arsenicalis with compound syrup of the phosphates. Under this treatment the disease entirely disappeared, and has not since recurred.

BRITISH LARYNGOLOGICAL AND RHINOLOGICAL ASSOCIATION.

BALANCE SHEET for the Year ending October 4th, 1894.

DR. CR.

INCOME.	£	s.	d.	EXPENDITURE.	£	s.	d.
To Balance brought down	56	0	2	By Hire of Rooms.....	16	19	9
,, Subscriptions	110	3	6	,, Refreshments	4	13	6
				,, Hire of Microscopes	0	15	0
				,, Postage, Stationery, and Petty Cash	7	14	9
				,, Secretarial Assistance.....	8	8	0
				,, "TRANSACTIONS" (2 years) Printing, &c.	116	4	6
				,, Bankers' Charges.....	0	6	6
				,, Balance at Bank	11	1	8
	£166	3	8		£166	3	8

ASSETS.	£	s.	d.
To Arrears of Subscriptions	28	7	0
,, Advertisements in "TRANSACTIONS"..... ..	2	2	0
	£30	9	0

M. P. MAYO COLLIER, G. CHARLES WILKIN, } *Auditors.*

Oct. 4th, 1894. V. H. WYATT WINGRAVE, *Hon. Sec.*